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A STUDY PREPARED FOR THE PUBLIC LAND LAW REVIEW
COMMISSION

IMPACT OF PUBLIC LANDS ON SELECTED REGIONAL
ECONOMIES

Galen Burghardt, et al

(Revised February, 1970)

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STUDY OF
IMPACT OF PUBLIC LANDS
ON SELECTED REGIONAL ECONOMIES

A Study Prepared for the
Public Land Law Review Commission

Galen Burghardt, Jr.
Project Director

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Assistant Director

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Consulting Services Corp.
Seattle - St. Paul

November, 1969
(Revised February, 1970)

* * * * *

Prepared under contract with the
Public Land Law Review Commission.

The opinions, findings, conclusions
and data expressed in this publication are
those of the authors and not necessarily
those of the Public Land Law Review Commission.

This publication constitutes only one
of a number of sources of information utilized
by the Commission in the conduct of its public
land study program.

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Vol. 71-289

FOREWORD

This manuscript is one of a series prepared for the Public Land Law Review Commission to provide data for the Commission's use in forming a basis for recommending future public land policies to Congress and the President of the United States.

As pointed out elsewhere, these reports represent the views of their authors and are not necessarily those of the Commission. They are only one of a number of information sources used by the Commission.

In establishing the Public Land Law Review Commission in September 1964, Congress declared the following policy: That the public lands of the United States shall be (a) retained and managed or (b) disposed of, all in a manner to provide the maximum benefit for the general public. It also directed that a comprehensive review be made of the public land laws and the related administrative rules and regulations to determine whether and to what extent revisions are necessary to accomplish the stated policy objective.

Considerable evidence pointed to the need for such a review. Dating back in some cases to the birth of the nation, our public land laws have developed over a long period of years through a series of Acts of Congress which are not fully correlated with each other. Administration of the public lands and the related laws has been divided among several agencies of the Federal Government. Quite possibly, these laws and the manner in which they are administered may be inconsistent with one another and inadequate to meet the current and future needs of the American people.

The Commission was instructed to:

1. Study existing statutes and regulations governing the retention, management, and disposition of the public lands;

2. Review the policies and practices of the Federal agencies charged with administrative jurisdiction over such lands insofar as such policies and practices relate to the retention, management, and disposition of those lands;
3. Compile data necessary to understand and determine the various demands on the public lands which now exist within the foreseeable future; and
4. Recommend such modifications in existing laws, regulations, policies and practices as will, in the judgment of the Commission, best serve to carry out the policy objective.

To fulfill these requirements, the staff was charged with the responsibility of performing or having performed the appropriate research and to then present to the Commission all the information and data necessary as a foundation for the Commission's deliberations, conclusions, and recommendations. A study program encompassing various subject areas was undertaken and separate manuscripts have been or are being prepared covering each of 33 separate topics.

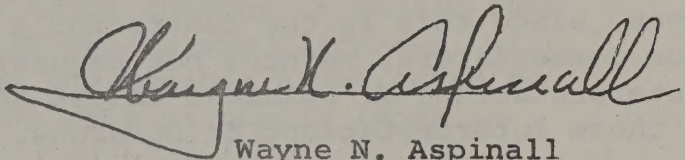
In fulfillment of a policy of maintaining the smallest technical and professional staff possible, most of the studies are being accomplished under contract with individuals, institutions such as universities, and research organizations; a few of the studies and analyses are being accomplished inhouse by the Commission staff, some with consultant assistance.

Thus, while it is still our purpose to review the whole body of public land laws at one time, each study has been designed to examine only a portion of the public lands complex and should be utilized with this understanding. There is, therefore, an interrelationship among the studies and the resultant manuscripts that will require review and examination of more than one report in order to obtain a

complete view of any one aspect of public land law and administration.

Each manuscript has been transmitted from the staff with a letter which discusses the content of the report and sets forth the policy matters to be considered with respect to the particular subject. A copy of the letter of transmittal for this report has been made a part of this volume in order to assist in the understanding of the approach.

These manuscripts have already served an extremely useful purpose in providing a common base for discussion in the Commission and between the Commission and its Advisory Council and the representatives of the 50 governors. We believe that they will also be valuable as reference works, not only on Federal public land matters but concerning all of our natural resources, for use by all levels of government -- Federal, state, and local -- and the academic community as well as all those who are interested in the tremendous natural resources that we, as a nation, possess.

A handwritten signature in dark ink, reading "Wayne N. Aspinall". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Wayne N. Aspinall
Chairman

Public Land Law Review Commission

1730 K STREET, N.W.
WASHINGTON, D. C. 20006

February 16, 1970

Honorable Wayne N. Aspinall
Chairman
Public Land Law Review Commission
Washington, D. C.

Dear Mr. Chairman:

Transmitted herewith is a Study of the Impact of Public Lands on Selected Regional Economies prepared for the Commission under contract by Consulting Services Corporation, Seattle, Washington.

The contractor's report was originally submitted to you with our letter of May 19, 1969. After you made copies available to the members of the Commission and the Advisory Council and Governors' Representatives, the manuscript was reviewed and comments were received from the Advisory Council and Governors' Representatives. In addition, our staff has reviewed the manuscript. The contractor was then furnished with all the comments so that inaccuracies could be corrected. 1/ However, since this is the contractor's report and not that of our commentators, we have not requested any changes based on interpretations or opinions unless the contractor agreed with those interpretations or opinions.

Corrections made by the contractor have been incorporated in the report as republished by the Clearinghouse for Federal Scientific and Technical Information.

The regional and local role of public lands (and the impact of their existence and use on the interest of both state and local governments, as well as on individuals) has been recognized as one of the important considerations in reviewing public land policy. The types of activities undertaken on the public lands, the degree of their development, the level of management, and the adjustments in use over time all have a direct or indirect influence on the well-being of local and regional economies. This study helps to define the nature of economic activity as it takes place in the region. Other studies in our research program give consideration to different

1/The comments referred to are part of the official files of the Commission. When the Commission ceases to exist, these files will be deposited with the National Archives, Washington, D. C.

forms of impacts and effects of public land policy, such as on state and local government, the physical environment, and on individual users and groups of users.

Within the framework described above, the study shows how various kinds of land and resource use contribute to economic activity. It is based on detailed data and analyses which show the actual composition of the economy in two regions of the United States for 1963. The three upper sub-basins of the Colorado River Basin comprise one region; the State of Washington the other. These regions were selected in part because of the prior intensive studies made in each and because of their ability to illustrate the differences between regional economies of varying degrees of development. The technique used in constructing these regional economic models, and for the evaluation of the role of the public lands, known as input-output analysis, describes the specific relationships among all the activities involved in producing and consuming goods and services within a specified area.

The report also presents projections of regional economic activity for 1980 based on the 1963 model. The role of public lands is described for both 1963 and 1980 in each of the study regions.

First, assuming no major changes in public land policy, the expected trends are discussed, with comparisons between the regions highlighted to indicate the varying role of public lands in each area.

Then, the 1980 projections are used as the basis for evaluating the impact of several hypothetical or possible changes in public land policy. This analysis was designed to demonstrate the probable effect on the regional economies resulting from changes in resource use, increased intensity of use, or new uses of public lands or resources.

The report shows that the relationship between public lands, their use, and the regional economy is complex; that it cannot be generalized based on the presence of public lands alone; and that specific economic relationships vary significantly from region to region. A number of factors in combination determine in any given region the nature of the economic activity

associated with public lands. These include:

- a. The presence or absence of large concentrations of economic activity.
- b. The degree of interdependence among producers and between producers and consumers within the region.
- c. The relative importance of different resource-based industries as a source of economic activity and employment.
- d. The contribution of the public lands to the individual resource-based industries.

In discussing hypothetical policy changes and the probable effects, the report makes no attempt to evaluate the feasibility or desirability of such changes from a national standpoint. In short, the alternatives are neither intended nor designed to influence or recommend policy action. We had the contractor include this for illustrative purposes only.

Although the subject of this analysis does not deal directly with a specific area of public land policy in the same sense that the majority of our other studies do, the following matters are submitted as being relevant for the Commission's consideration:

1. To what extent and in what manner should the Commission take into account the local-regional economic impact of public land use in its policy deliberations and ultimate recommendations?
 - a. The relative importance to be assigned to the regional implications of resource policies and programs.
 - b. Circumstances that may warrant recognition of regional impacts of public land policy, such as a depressed regional economy, the termination of programs or activities, or unusual dependence on public lands.
 - c. Extent to which allowance is made for differences in the structure of the regional economy or the degree of economic development.

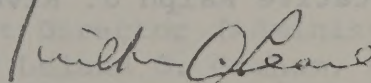
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2. Should public land policy serve, in specified instances, as a means of deliberately influencing regional or local economic activity?
 - a. The desirability of using resource programs to promote social objectives of the Federal Government such as the maintenance of regional income, the stabilization of regional employment, or the promotion of the "rural way of life".
 - b. The feasibility of using resource programs to influence the geographical distribution of economic activity and population.
3. Should explicit consideration of local-regional impacts be specified as one basis for public land management?
 - a. The extent and manner in which managing agencies are required to specify and consider regional impacts when new programs are proposed or existing programs are significantly changed or terminated.
 - b. The extent to which authority is delegated to the agencies to adjust management programs to minimize adverse regional effects and/or to maximize regional benefits.
 - c. The extent to which management of the public lands is made responsive to the initiative of regional governments and/or user interests.

There are many issues involved in each of the above policy considerations, as evidenced by the discussion in the study report. The report thus contains valuable insights into the entire matter of balancing regional economic considerations against other expressions of the public interest.

The project officer for this study was Don A. Seastone. Thomas R. Waggener served as project associate.

Sincerely,



Milton A. Pearl
Director

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Harry L. Moffett served as Assistant Director (Administration) from October 1966 to July 1969, and Leland O. Graham, Arthur D. Smith and Max M. Tharp made significant contributions as members of the staff prior to August 1969.

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"The Chairman of the Commission shall request the head of each Federal department or independent agency which has an interest in or responsibility with respect to the retention, management, or disposition of the public lands to appoint, and the head of such department or agency shall appoint, a liaison officer who shall work closely with the Commission and its staff in matters pertaining to this Act."

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"There is hereby established an Advisory Council, which shall consist of the liaison officers appointed under Section 5 of this Act, together with 25 additional members appointed by the Commission who shall be representative of the various major citizen's groups interested in problems relating to the retention, management, and disposition of the public lands,...."

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The Commission's Organic Act states that "The Chairman of the Commission shall invite the Governor of each State to designate a representative to work closely with the Commission and its staff and with the Advisory Council in matters pertaining to this Act". The following are serving as representatives of the Governors of the respective States at this time:

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Background

The public lands of America date back to the time of the Union's formation. Then, and soon thereafter, seven of the original States ceded to the Central Government some 233.4 million acres of land lying westward to the Mississippi River. Thereafter, through purchase and treaty, the United States acquired an additional billion acres of public domain, the last acquisition being the purchase of Alaska from Russia in 1867. Altogether, nearly 2 billion acres of land in 32 States have been part of the public domain at one time or another.

At first, these lands were sold for their revenue. Eventually, however, as the pioneers swept westward, the revenue-raising policy was replaced by one stressing settlement and development of the land. The Homestead Act of 1862 was the first of a series of settlement and development laws enacted over a period of some 60 years - the desert land law, mining laws, and the various homestead laws - all designed to meet a particular need of the period. Meanwhile, many millions of acres were transferred to private ownership through military, railroad, and other land grants, including various grants to the States.

Through these means, nearly 1.2 billion acres have passed from Federal ownership, leaving approximately 715 million acres of the original public domain lands in Federal ownership. Of these 715 million acres 364 million are in the State of Alaska. Add to this the 52 million acres acquired for various purposes, and federally owned lands today amount to approximately 770 million acres - about one-third of the Nation's total land area. Some of these lands are in national forests and some are reserved for national parks, wildlife refuges, and other specific uses; but more than half constitute the "vacant and unappropriated" public domain lands which have never left Federal ownership and have not been dedicated to a specific use pursuant to legislative authorization.

The Act establishing the Public Land Law Review Commission contains in section 10 the following definition:

As used in this Act, the term 'public lands' includes (a) the public domain of the United States, (b) reservations, other than Indian reservations, created from the public domain, (c) lands permanently or temporarily withdrawn, reserved or withheld from private appropriation and disposal under the public land laws, including the mining laws, (d) outstanding interests of the United States in lands patented, conveyed in fee or otherwise, under the public land laws, (e) national forests, (f) wildlife refuges and ranges, and (g) the surface and subsurface resources of all such lands, including the disposition or restriction on disposition of the mineral resources in lands defined by appropriate statute, treaty, or judicial determination as being under the control of the United States in the Outer Continental Shelf.

Working with the Commission are a 33-member Advisory Council and the representatives of the 50 State Governors.

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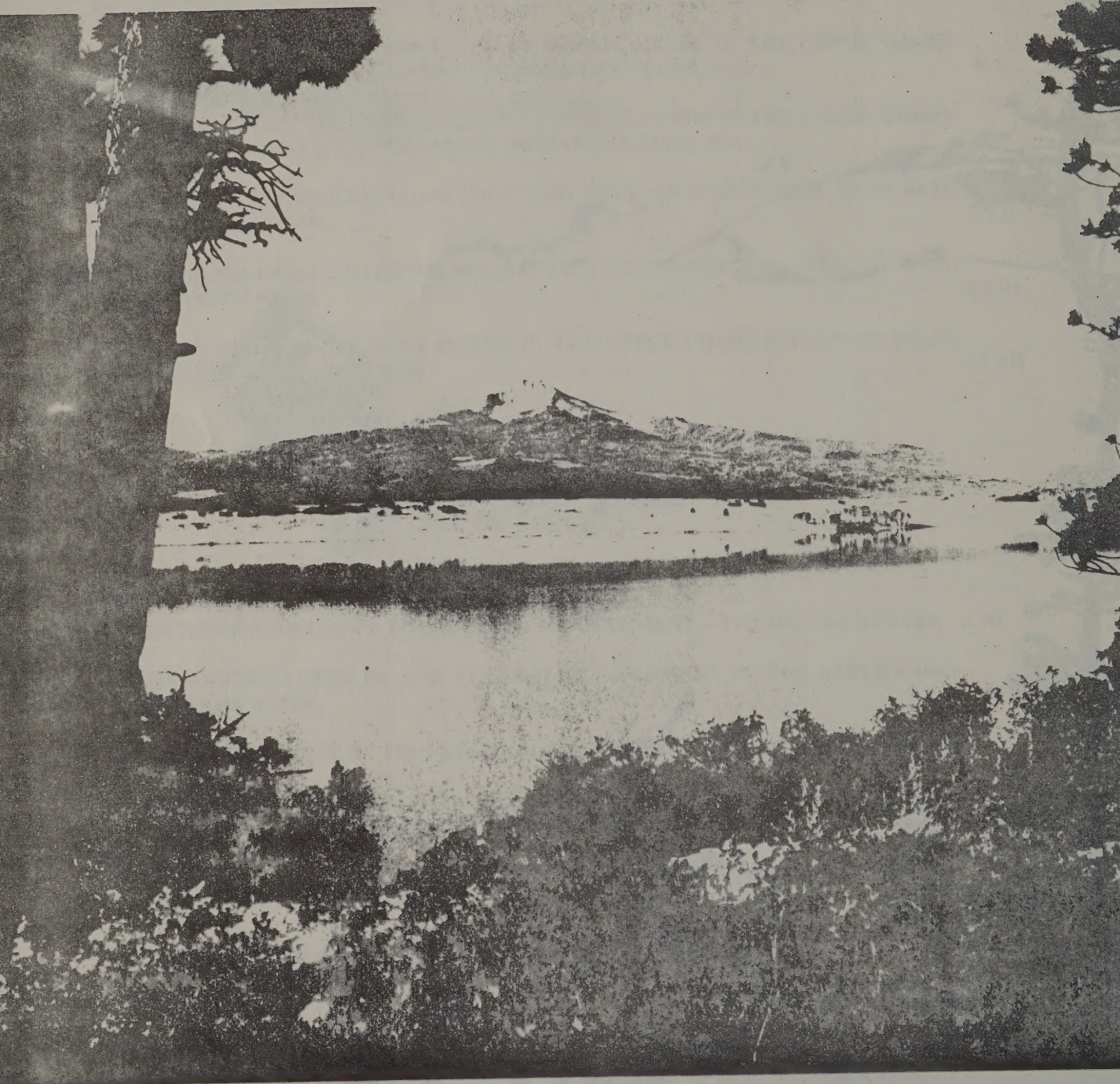
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A SUMMARY OF FINDINGS AND CONCLUSIONS

INTRODUCTION



Public lands in the U. S. comprise approximately one-third of our land area.^{1/} These lands are an important source of forage, timber, fuel minerals, and non-fuel minerals, and are extensively used for recreation. Due to increasing demands on public lands, and conflicts among the benefits they can provide, their management is attracting increasing public attention.

Conflicts over the management of public lands are particularly acute among those who favor exclusive use of large areas, and those who favor multiple resources development. The Congress of the United States established the Public Land Law Review Commission in an attempt to resolve some of these conflicts.

The purpose of the Public Land Law Review Commission, as set forth in the Act of September 19, 1964, (78 Stat. 982, 43 U.S.C. §§ 1391-1400 (1964), as amended by the Act of December 18, 1967, 43 U.S.C.A. § 1394 et seq (February 1968 Pamphlet), is to: (1) "study existing statutes and regulations governing the retention, management, and disposition of the public lands;" (2) "review the policies and practices of the Federal agencies charged with administrative jurisdiction over such lands insofar as such policies and practices relate to the retention, management, and disposition of these lands;" and (3) "compile data necessary to understand and determine the various demands on the public lands which now exist and which are likely to exist in the foreseeable future."

(1) Public lands are formally defined in Section 10 of Public Law 88-606, approved September 19, 1964 as

"(a) the public domain of the United States; (b) reservations, other than Indian reservations, created from the public domain; (c) lands permanently or temporarily withdrawn, reserved, or withheld from private appropriation and disposal under the public land laws, including the mining laws; (d) outstanding interests of the United States in lands patented, conveyed in fee or otherwise, under the public land laws; (e) national forests; and, (f) wildlife refuges and ranges.

OBJECTIVES OF THE STUDY

The present study is one of a series designed to implement the Commission directive of recommending to the President and the Congress "...such modifications in existing laws, regulations, policies and practices as will, in the judgment of the Commission, best serve to carry out the policy... (that) public lands of the United States shall be (a) retained and managed or (b) disposed of, all in a manner to provide the maximum benefit for the general public." A better understanding than we now have of the relative importance of major uses of public lands to local and regional economies, and impacts on these economies of policy changes, are obviously of importance to the Commission.

Specifically, the objectives of the present study are to:

- (1) Compare the relative economic importance of major commodities produced on public lands (timber, forage for domestic livestock, energy fuels, non-fuel minerals, outdoor recreation, and intensive agriculture) for Washington State and a portion of the Colorado River Basin^{2/} and the United States as a whole.
- (2) Determine the levels of selected commodity outputs from public lands in Washington, and a selected portion of the Colorado River Basin, for 1963.
- (3) Evaluate the direct and indirect economic effects of public land outputs on other sectors of the regional economies noted above.
- (4) Develop economic projections to 1980 for absolute and relative importance of public lands output for the two regional economies.
- (5) Estimate potential economic impacts of incremental changes in levels of public lands outputs on the two regional economies.
- (6) Based on the results obtained in (1) through (5) above, and on other relevant information, evaluate the role of public lands in both local and regional economies.

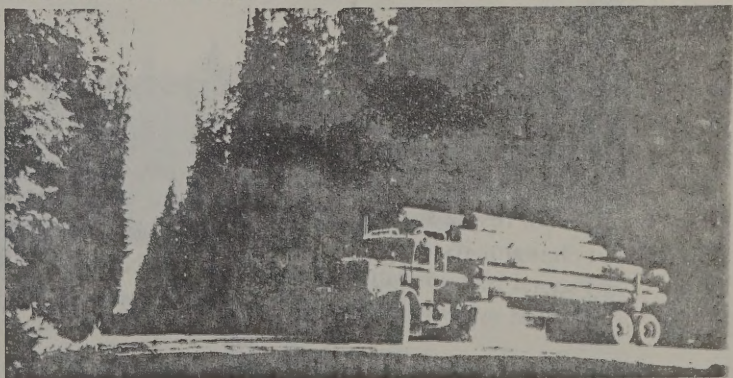
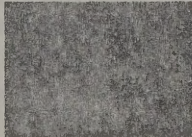
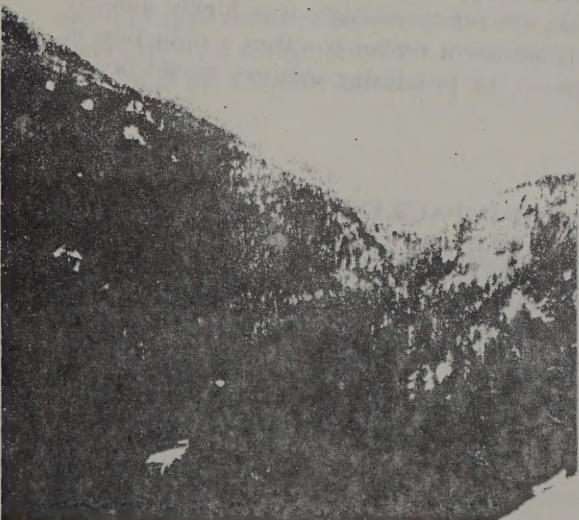
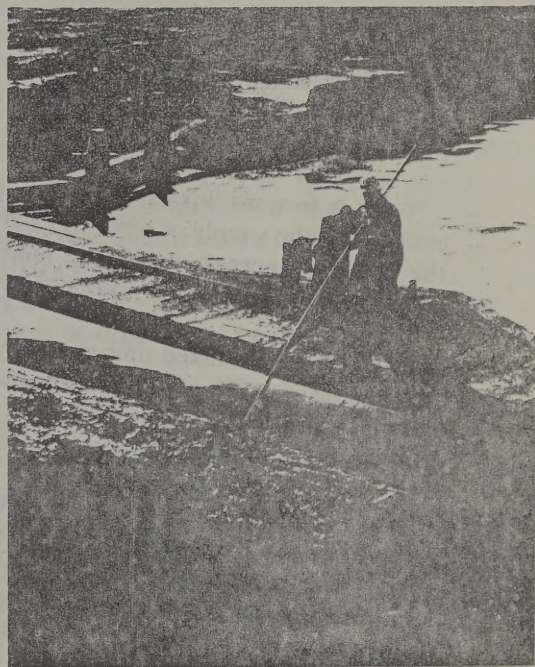
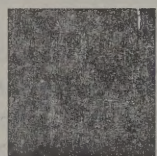
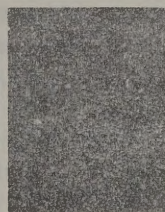
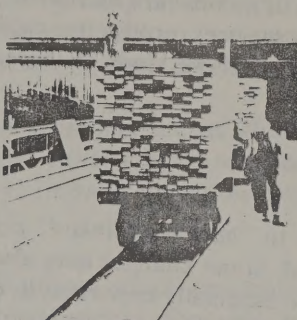
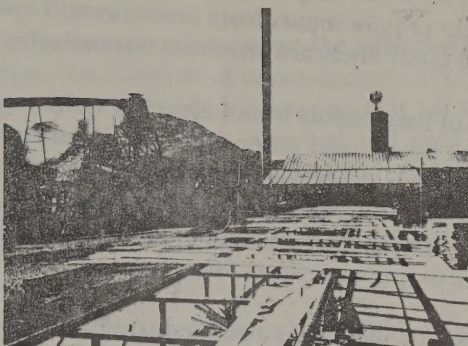
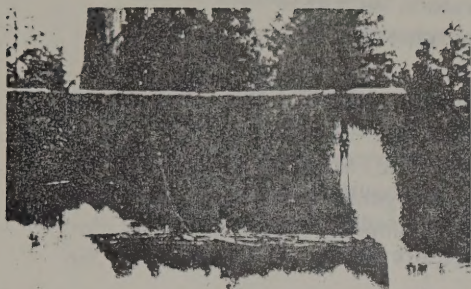
METHODOLOGY INPUT-OUTPUT IN BRIEF

The Commission was particularly interested in determining the extent to which public land management, and changes in management policies, can affect employment and income in a regional economy. Input-output (interindustry) analysis is widely used to provide estimates of economic impacts. Regionally developed input-output tables are available for the State of Washington and for selected portions of the Colorado River Basin. These tables provided the Commission with highly valuable information for achieving their objectives.

Input-output analysis provides a means of estimating industry structure and how changing output levels on public lands will affect other industries. Moreover, input-output can be used to estimate both direct and indirect economic effects. Industrial activity is highly interdependent, hence a change in the output of a single industry will have far-reaching effects. Determining indirect effects of alternative uses of public lands was a major objective in the present study.

A hypothetical example is most useful for briefly describing the input-output technique. Consider, for example, a sawmill. Because of an increased demand, the operator wishes to increase lumber output. If he is to be successful, he must increase his purchases of logs, power, a variety of other supplies, and labor.

^{2/} Figure S 2 is a map of the area included in the study.



The first three purchases represent increased interindustry purchases. The hiring of more labor represents increased purchases of productive services, and results in an increase in value added (real income). He might require inputs from other sawmill operators, such as unfinished lumber or logs. Purchases of the latter kinds are known as intraindustry purchases.

Increased purchases of basic inputs from industries which supply sawmills are called "*direct*" requirements. Since logging, power, and other supplying industries also require inputs if they are to expand their output, industries supplying these industries must also increase their outputs. Increases in industrial output of the latter kinds are known as "*indirect*" requirements. Within the framework of input-output analysis, total changes in industrial output in a region resulting from the assumed increase in lumber output are called "*direct and indirect*" requirements.

An additional effect of increasing total industrial output is to increase personal income. More labor is employed, and other forms of income are increased. As a result, the demand for consumption goods and services, government services, productive capital, and related services will also increase. Output changes required to satisfy these kinds of increased demands are known as "*induced*" effects or requirements.

"Forward-Linked" Economic Impacts

The discussion above pertains to "*backward-linked*" economic impacts on total output which resulted from a change in demand. Some changes may also have "*forward-linkage*" or "*supply*" impacts. These kinds of changes are especially important in evaluating the effects of changing public land outputs.

A forward-linkage impact may occur when the supply of a raw material is changed. For example, if the supply of timber in a region were increased, this would encourage producers within the region to increase outputs of lumber, plywood, and pulp. Conversely, if the supply of timber were reduced in a region, producers would be forced to reduce output.

Forward-linked timber supply effects are extremely important to Washington's forest products industries. They are almost totally dependent upon domestic timber supplies. In a situation of this kind a reduction in the output of timber is almost certain to require a concomitant adjustment in the output of the forest products industries.

If local processors could adjust to an increase or decrease in the local supply of a raw material by decreasing or increasing imports, local raw materials suppliers would have little leverage on local processing industries. Since timber transport costs are relatively high, it is highly unlikely that Washington processors could economically import sufficient timber to offset a reduction in local timber supplies. Rather, an adjustment in the size of the processing industry would occur.

SOME QUALIFICATIONS ON THE USE OF IMPACT ESTIMATES

The word "*impact*" is commonly used to denote effects, pressures, adjustments, and other types of responses. For example, defense expenditures have an impact on an economy in the sense of changing its structure. One might consider the impact of education on moral codes and our sense of social responsibility. The impact of economic policy changes emanating from public land management agencies is the focus of this study.

In the present study the term impact is used to mean the **adjustment burden** placed on an economy as a result of a policy change. An example of contemporary interest would be the withdrawal of a forested area from timber production to be used exclusively for recreation. What would such a withdrawal do to output in the logging, timber, plywood and pulp industries? How much would employment fall in each of these industries? How much would it expand in the service trades? Impacts are estimated changes in output, and the resultant reallocation of resources triggered by a policy change. Impact estimates provided by input-output analysis are based on relatively restrictive, static assumptions.

In a dynamic economy, particularly one at, or near, full employment, there is considerable doubt the full effects of impacts made by using input-output would be realized. Moreover, unemployment resulting from policy changes is likely to be temporary. Unemployed labor does have mobility, although it will vary widely among different labor skills.

Wage rate adjustments provide another means whereby unemployed labor may be re-employed. Input-output analysis precludes either type of readjustment mechanism, although both are highly important in our economy. Impact estimates developed here must be interpreted accordingly.

Superficial interpretations of impact effects (multipliers), which disregard dynamic effects and the simplifying assumptions of input-output techniques, are not uncommon. One of the limitations of input-output is the extent to which estimates developed by the technique are misused.

One further point needs to be emphasized regarding the economic impact of public land ownership. Ownership has impact only if management decisions differ significantly among owner-ships. For example, timber cut from public lands contributes significantly to the nation's forest products supply. This same timber would have the same impact if it were sold by private operators rather than public officials. Ownership impacts arise only because of differential behavior on the part of public and private timber managers.

Public agencies obviously manage lands differently than private owners. Their objectives are different, and the means they use to achieve their objectives also differ. Nevertheless, in the present study these differences are assumed to be minimal. Public ownership per se is assumed not to cause differential impacts. Public ownership is important only insofar as policy changes are made which change resource supply conditions. These changes might involve goods or services to producers (timber, forage, etc.), or to consumers (recreation). Changes in private management policies could have similar effects.



OUTPUT OF PUBLIC LAND

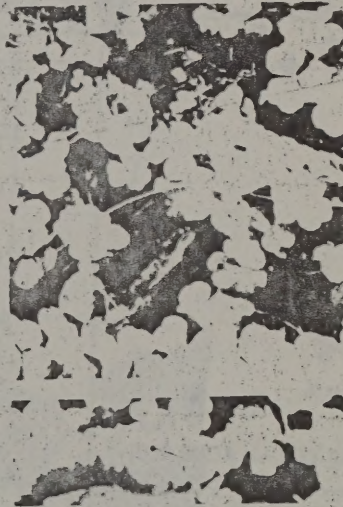
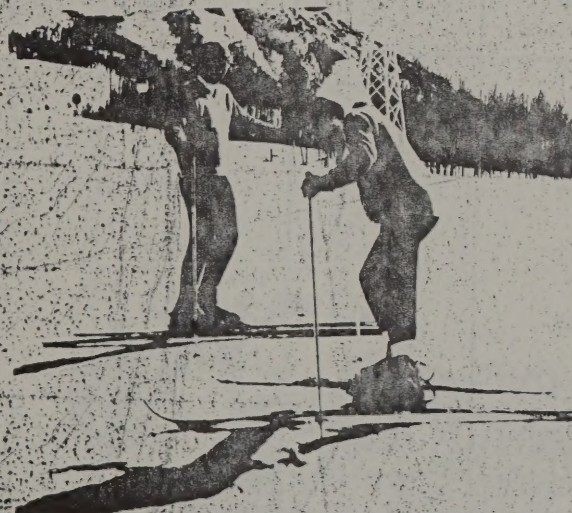
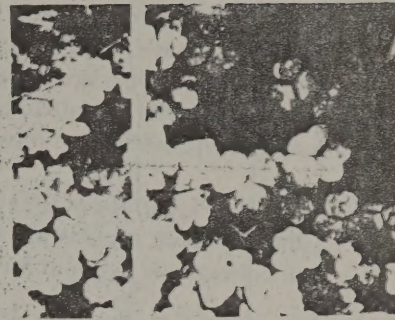
For the most part, public agencies do not produce final products. Recreation is the most important exception. Land is leased, or commodities produced on public lands are sold, to private enterprise. Most are used as inputs in private industry. Industries and activities supported in part by inputs from public lands are indicated in table S-1. In grazing, intensive agriculture, and mineral extraction, public agencies primarily administer and supervise leases, and permitted-use agreements. Production, subject to the constraints of use arrangements, is primarily a function of private enterprise.

TABLE S-1

OUTPUTS FROM PUBLIC LAND BY INDUSTRY ^{a/}

SIC NO. ^{b/}	INDUSTRY TITLE	DESCRIPTION
011, 019, 012 014	Intensive Agriculture	Land leased from public for production of fruits, nuts, field crops, grain, and vegetables. Public output in this category is currently negligible.
013	Livestock and Livestock Products	Grazing permits issued to private ranchers, who, in turn, produce sheep and cattle.
11, 12, 13	Fuel Minerals	Coal, petroleum, and natural gas leases made by Bureau of Land Management (BLM).
10, 14	Non-Fuel Minerals	Metal and stone leases made by BLM.
08	Timber	Stumpage (standing timber) sales to private industry. U. S. Forest Service and BLM are primary administering agencies.
None	Recreation	Recreational activities, primarily on National Parks, National Forests and BLM administered lands. Specific activities include hiking, hunting, camping, skiing, fishing, etc.
^{a/} Outputs listed are not necessarily an exhaustive list. Unless otherwise indicated, products listed are considered in the present study. ^{b/} The SIC code of an industry is the classification provided in the <i>Standard Industrial Classification Manual</i> published by the Executive Office of the President, Bureau of the Budget, 1957. The classifications cannot be entirely accurate, but the system provides the best available means of classifying industries developed to date.		

Public agencies are primarily responsible for growing and protecting timber sources, while timber harvests are almost completely a private activity. Public timber output, as evaluated in the present study, is restricted to timber sales made to private loggers and other timber processors. By restricting the analysis to the impact of timber sales, and changes in current levels of sales, certain activities are neglected. These include road maintenance, precommercial thinning, camp-ground construction and maintenance, and a host of other activities financed through the Federal budgeting process. All would obviously be affected by changes in present levels of management. Relative to the impact of timber sales, these activities were considered to be negligible, hence were not considered here.



Because of the highly varied nature of recreation, public agencies may be the sole producer involved, e.g., hiking, camping, and hunting, or public agencies may lease sites to private operators, who provide the recreational activities, e.g., skiing, and concessions awarded in conjunction with park management. User fees are often nominal.

If regional public lands attract recreational users, these lands do have an impact on the regional economy. Non-resident visitors, as well as resident visitors, who might recreate elsewhere, in the absence of local recreational facilities, purchase food, transportation, lodging and related amenities. Recreational expenditures for a region are sales associated with the recreational use of regional public lands in the present study.

THE STUDY REGIONS

The Upper Colorado River Basin and Washington State were chosen for study because: (1) both areas have significant public land ownership, (2) they provide diverse degrees of economic development, (3) they are dependent upon different basic resources, (4) most basic resource industries which depend on public lands exist in the two regions, (5) they have diverse urban-rural population characteristics, and most importantly, (6) input-output tables are available for both regions.

The locations of the two study regions are shown in figure S-1. Each area is shown in figures S-2 and S-3. Both regions are somewhat representative of the Eleven Western States³ and Alaska, which collectively account for more than 95 percent of all public lands.

Public lands comprise significant portions of the land area of both regions (table S-2). Almost 57 percent of the Upper Colorado River Basin's total land area of 70.4 million acres is public land. Almost 26 percent of Washington State's land area is public. In the entire U. S. about 32 percent of total land area is public.

TABLE S-2

**PUBLIC LAND OWNERSHIP IN THE UPPER THREE COLORADO SUB-BASINS,
WASHINGTON STATE, AND THE UNITED STATES, BY AGENCY, 1966**
(Millions of Acres)

	UPPER THREE COLORADO SUB-BASINS	WASHINGTON STATE	UNITED STATES
BUREAU OF LAND MANAGEMENT	24.4	.3	485.4
U. S. FOREST SERVICE	12.4	9.7	182.9
BUREAU OF RECLAMATION	22.2	.1	7.3
NATIONAL PARK SERVICE	0.7	1.1	18.3
ALL OTHER AGENCIES	0.1	.2	50.4
TOTAL PUBLIC LANDS	39.9	11.4	734.3
TOTAL REGIONAL ACREAGE	70.4	44.2	2,313.7
PERCENT PUBLIC LAND OF TOTAL ACREAGE	56.7%	25.8%	31.7%
<p>Sources: For Colorado, "Inventory Report on Land Property owned by the United States throughout the World, 1966", General Services Administration.</p> <p>For Washington and the United States, "Table I, Public Land Acreages by Agencies and States, 1966", p. 1 and 2, by Public Land Law Review Commission, 10-31-68.</p>			

Erratum. Table S-2, Bureau of Reclamation, Upper Three Colorado Sub-Basins: For 22.2 read 2.2.

³ These are: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Because these states share a number of similar characteristics, they have recently been treated as an economic unit. For the present study, these states with the addition of Alaska may also be called "public land" states.

COLOR ILLUSTRATIONS REPRODUCED IN BLACK AND WHITE

LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT

FIGURE S-1



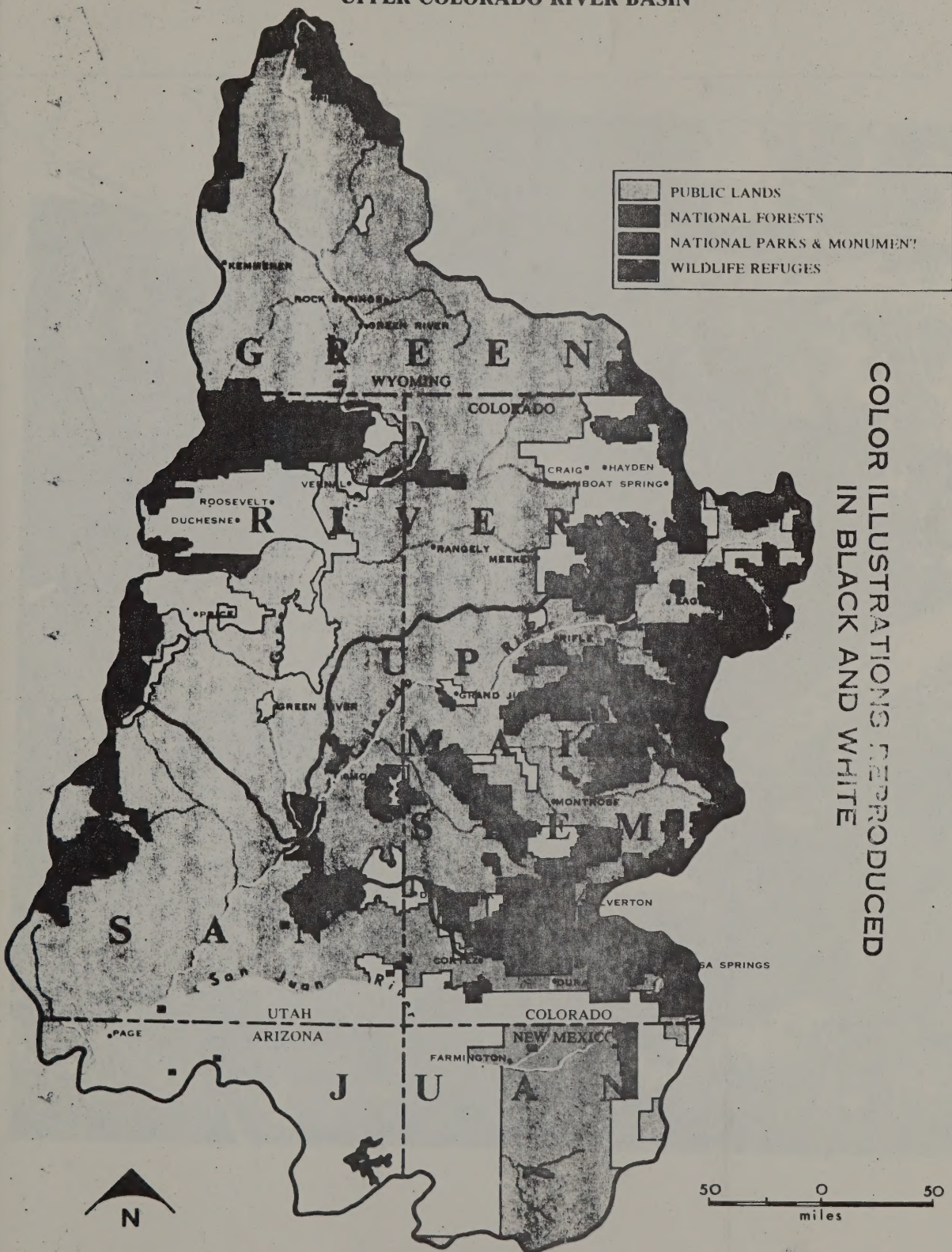


A.

B

FIGURE S-2

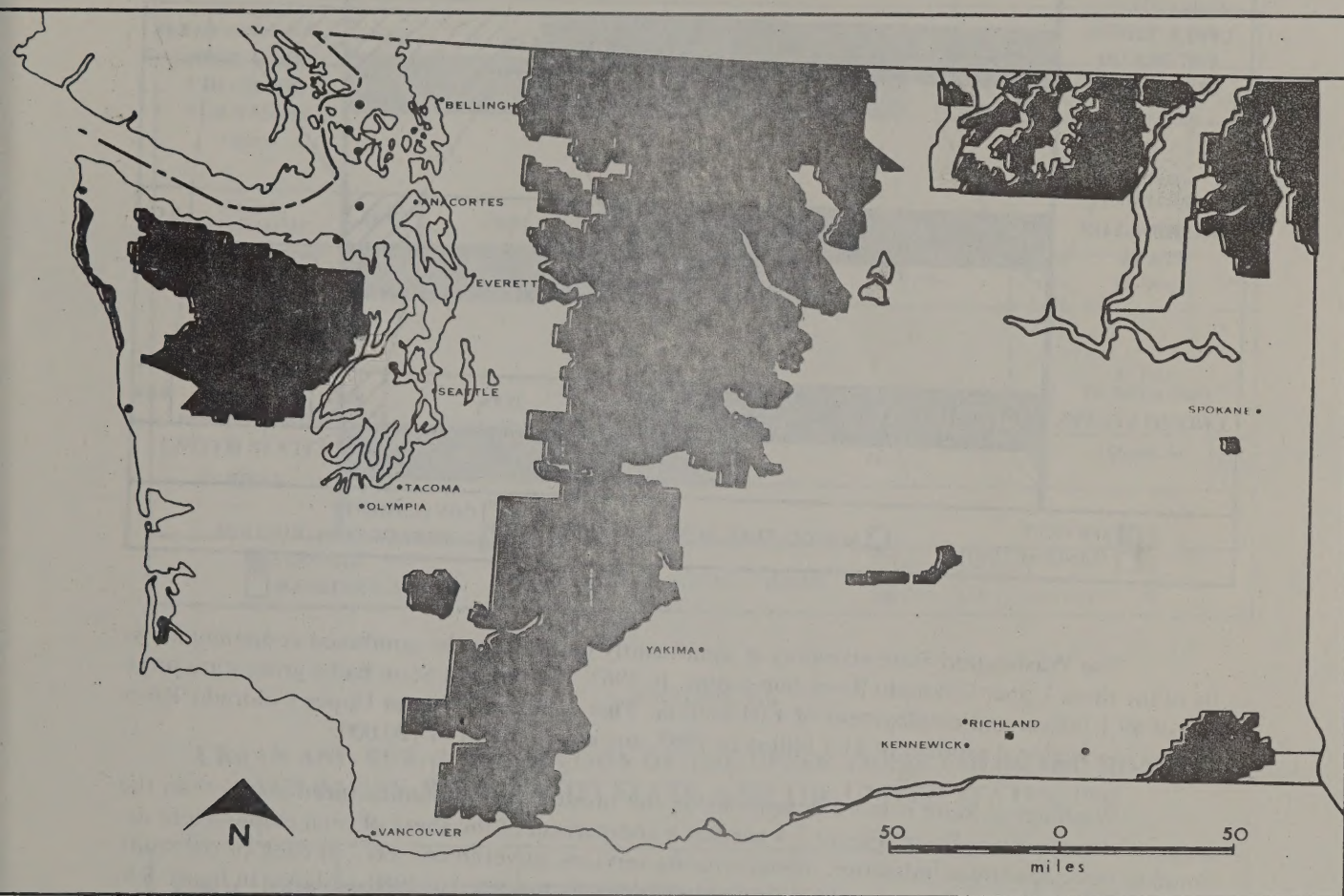
LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT IN THE
UPPER COLORADO RIVER BASIN



COLOR ILLUSTRATIONS REPRODUCED
IN BLACK AND WHITE



FIGURE S-3
LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT IN WASHINGTON STATE

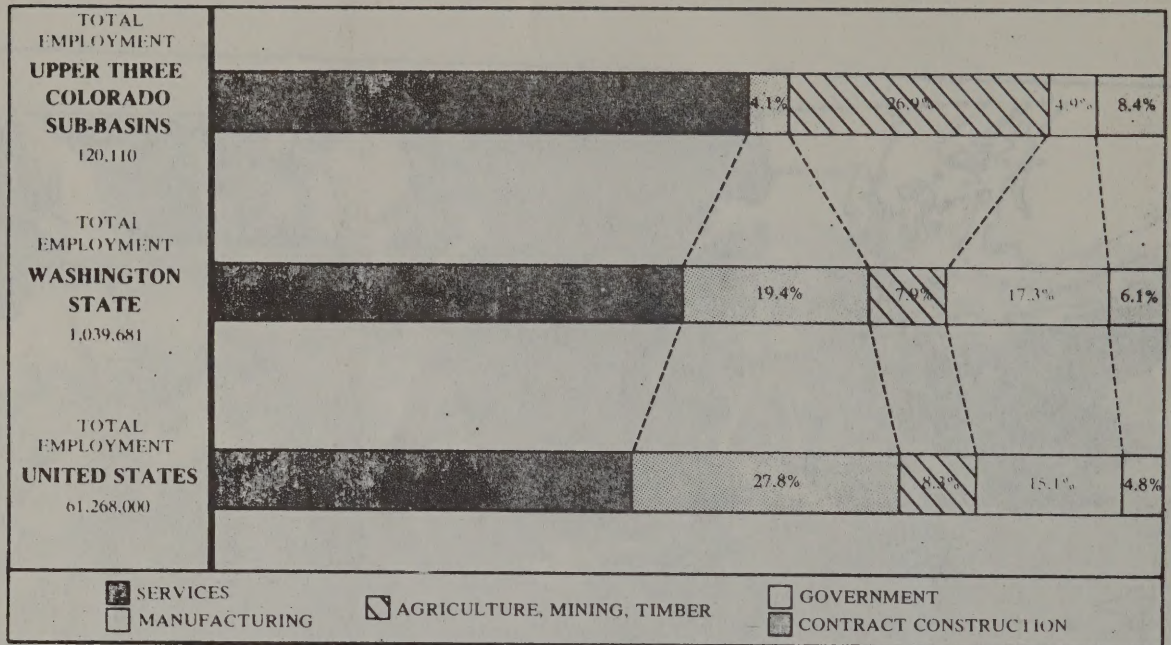


PUBLIC LANDS	
NATIONAL FORESTS	
NATIONAL PARKS & MONUMENTS	
WILDLIFE REFUGES	

**COLOR ILLUSTRATIONS REPRODUCED
 IN BLACK AND WHITE**

FIGURE S-4

AN EMPLOYMENT COMPARISON OF THE UPPER THREE COLORADO SUB-BASINS, WASHINGTON STATE, AND THE UNITED STATES, 1963



The Washington State economy is significantly larger than the combined economic activity of the three Upper Colorado River Sub-basins. In 1963, Washington State had a gross state product of \$9.1 billion and employment of 1.04 million. This compares with an Upper Colorado River Basin gross regional product of \$1.1 billion in 1963, and employment of 120,000.

Washington State is more dependent on the production of manufactured goods than the Upper Colorado River Basin. Figure S-4 permits a comparison of the share of total employment devoted to basic resources industries, manufacturing services, government, etc., in each of the study regions and the United States for 1963. Similar information, projected to 1980, is shown in figure S-5.

A basic economic difference between the two study regions is the level of their economic development. Distribution of population by location (urban or rural), and whether or not employed in farming, reflect differential levels of economic development. These differences for the two regions, and for the entire U. S. are shown in figure S-6.

In Washington State, raw materials are processed within the region, and manufactured commodities are exported to a much greater extent than in the Upper Colorado River Basin. This basic difference is not expected to change by 1980. Service employment in both regions is projected to comprise a greater share of the 1980 labor force.

In brief, the two regions provide a basis for comparing economic impact of public land resources and their related management policies. Washington has a diverse, well developed, regional economy. Economically, the Upper Colorado is relatively undeveloped.

FIGURE S-5

AN EMPLOYMENT COMPARISON OF THE UPPER THREE COLORADO SUB-BASINS, WASHINGTON STATE, AND THE UNITED STATES, 1980

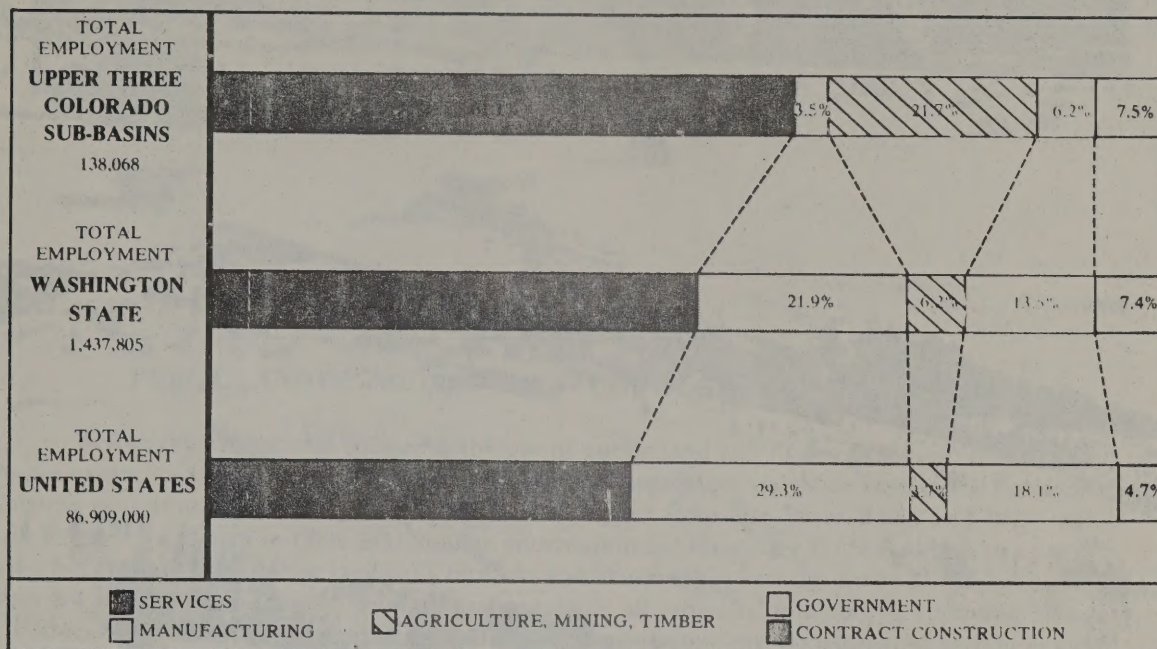
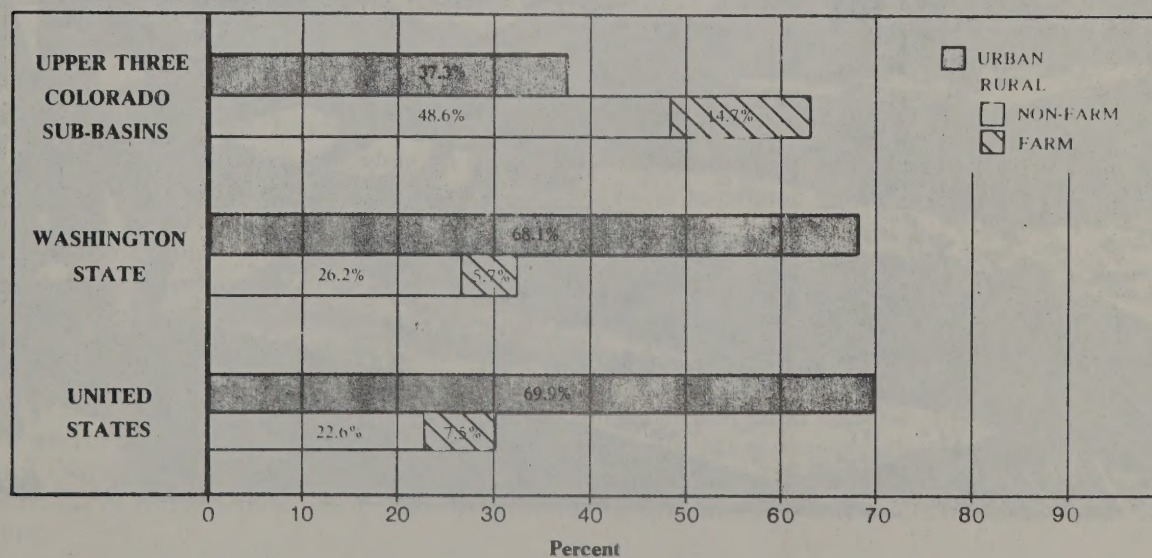


FIGURE S-6

URBAN AND RURAL POPULATION OF THE UPPER THREE COLORADO RIVER SUB-BASINS, WASHINGTON STATE, AND THE UNITED STATES, 1960







PUBLIC LAND OUTPUTS IN THE STUDY REGIONS: 1963 AND 1980

Before the impact of a change in the use of public land and its resources can be estimated, it is necessary to know the magnitudes of production dependent on those resources. Portions of industrial output attributed to public lands for the Upper Colorado River Basin and Washington State in 1963 are shown in table S-3. Similar information for the entire U. S. is shown in table S-5. Projected outputs from public lands of Colorado and Washington and the entire U. S. are shown in tables S-4 and S-5, respectively. (Note: Total output in all tables is obtained by summing all sales in producers' prices. Relative importance of public land output can be estimated in this manner, however, total output involves double counting. The GNP measure of output is obtained by summing value added of each producer, hence double counting is eliminated.)

As noted in the tables, resources from public lands are both **relatively** and **absolutely** more important in the Upper Colorado River Basin (\$251.6 million, 14.8 percent) than they are in Washington State (\$174.6 million, 1.5 percent). This comparison is based on actual sales made by public agencies and expenditures generated by recreational use of public lands. On the other hand, total output in the Upper Colorado River Basin (\$1,696.3 million) is smaller than in Washington State (\$12,503.3 million).

Public lands are relatively less important to the national economy than to either study region. It should be noted, however, that twelve states contain more than 95 percent of all public lands. Most national output dependent on public lands is derived from these twelve states. Public lands make only a marginal direct contribution to output in the remaining 38 states.

In analyzing hypothetical policy alternatives, the twelve states in which public land resources are more concentrated are obviously the most directly affected. On the other hand, changing public land resource use in these twelve states can have an appreciable impact on other states through the effects of interregional competition.

Between 1963 and 1980 the overall relative importance of basic resources in the national economy is expected to fall. The rate of increase in expenditures associated with recreation is expected to rise more rapidly than the rate of increase of national income. As a result, the relative importance of recreation on public lands will increase significantly and that of raw materials will decline.

TABLE S-3

**A COMPARISON OF THE IMPORTANCE OF PUBLIC LANDS IN THE UPPER THREE COLORADO RIVER SUB-BASINS AND
WASHINGTON STATE, 1963**

(Millions of 1963 Dollars at Producers' Prices)

☐ UPPER THREE COLORADO SUB-BASINS

☐ WASHINGTON STATE

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Output Attributed to Oil and Gas on Federal Lands		Output Attributed to Coal of Federal Lands		Recreation Expenditures Attributed to Federal Recreation Facilities		Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
RANGE LIVESTOCK	\$ 74.3	\$23.2	31.2%									\$ 23.2	31.2%
FORESTRY	5.2			\$4.8	91.5%							4.8	91.5
OIL AND GAS	299.0					\$126.8	42.4%					126.8	42.4
COAL	54.0							\$49.3	91.3%			49.3	91.3
EATING AND DRINKING	34.8									\$19.1	54.9%	19.1	54.9
LODGING	25.8									9.8	38.1	9.8	38.1
OTHER RETAIL	124.7									1.8	1.4	1.8	1.4
SERVICE STATIONS	13.0									4.8	48.2	4.8	48.2
SERVICES	49.0									12.0	24.4	12.0	24.4
ALL OTHER SECTORS	1,016.5												
TOTAL	\$1,696.3	\$23.2	1.4%	\$4.8	.3%	\$126.8	7.5%	\$49.3	2.9%	\$47.5	2.8%	\$251.6	14.8%

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Resident		Non-Resident		Amount	Percent
LIVESTOCK, AND PRODUCTS	\$ 235.4	\$ 1.9	.5%							\$ 1.9	.5%
OTHER AGRICULTURE, FISHING, MINING	498.1					\$ 1.0	.2%	\$.8	.2%	1.8	.4
FOOD AND KINDRED PRODUCTS	1,113.0					11.5	1.0	9.1	.8	20.6	.9
TIMBER	353.3			\$104.6	29.6%					104.6	29.6
PETROLEUM REFINING	265.5					4.3	1.6	3.4	1.3	7.7	2.9
OTHER NON-DURABLE MANUFACTURING	241.0					3.4	1.4	2.7	1.1	6.1	2.5
OTHER DURABLE MANUFACTURING	710.3					.8	.1	.6	.1	1.4	.2
TRANSPORTATION, COMMUNICATIONS, PUBLIC UTILITIES	1,159.4					1.7	.2	1.4	.1	3.1	.3
WHOLESALE AND RETAIL TRADE	1,753.7					7.7	.4	6.1	.4	13.8	.8
SERVICES	1,655.3					7.6	.5	6.0	.4	13.6	.8
ALL OTHER SECTORS	4,518.3										
TOTAL	\$12,503.3	\$ 1.9	*	\$104.6	.8%	\$38.0	.3%	\$30.1	.2%	\$174.6	1.5%

*Negligible

TABLE S-4

A COMPARISON OF THE IMPORTANCE OF PUBLIC LANDS IN THE UPPER THREE COLORADO RIVER SUB-BASINS AND WASHINGTON STATE, 1980

(Millions of 1963 Dollars at Producers' Prices)

☐ UPPER THREE COLORADO SUB-BASINS

☐ WASHINGTON STATE

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Output Attributed to Oil and Gas on Federal Lands		Output Attributed to Coal of Federal Lands		Recreation Expenditures Attributed to Federal Recreation Facilities		Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
RANGE LIVESTOCK	\$ 106.5	\$21.0	19.9%									\$ 21.0	19.8%
FORESTRY	8.4			\$ 7.7	91.3%							7.7	91.3
OIL AND GAS	342.3					\$160.4	46.9%					160.4	46.9
COAL	68.3							\$58.8	86.1%			58.8	86.1
EATING AND DRINKING	67.1									\$ 48.7	72.7%	48.7	72.7
LODGING	58.3									24.7	42.4%	24.7	42.4
OTHER RETAIL	236.8									4.6	1.9	4.6	1.9
SERVICE STATIONS	22.7									12.3	54.2	12.3	54.2
SERVICES	100.7									30.4	20.7	30.4	20.7
ALL OTHER SECTORS	1,356.7												
TOTAL	\$2,367.8	\$21.0	.9%	\$ 7.7	.3%	\$160.4	6.8%	\$58.8	2.5%	\$120.7	5.1%	\$368.6	15.6%

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Resident		Non-Resident		Amount	Percent
						Amount	Percent	Amount	Percent		
LIVESTOCK AND PRODUCTS	\$ 398.6	\$1.9	.5%							\$ 1.9	.5%
OTHER AGRICULTURE, MINING, FISHING	787.8					\$ 2.4	.3%	\$ 2.0	.3%	4.4	.6
FOOD AND KINDRED	1,849.0					27.2	1.5	21.5	1.2	48.7	2.6
TIMBER	459.3			\$137.8	30.0%					137.8	30.0
PETROLEUM REFINING	515.0					10.1	2.0	8.0	1.6	18.1	3.6
OTHER NON-DURABLE MANUFACTURING	493.0					8.0	1.6	6.4	1.3	14.4	2.9
OTHER DURABLE MANUFACTURING	1,276.4					1.9	.1	1.3	.1	3.2	.3
TRANSPORTATION, COMMUNICATION, PUBLIC UTILITIES	2,248.1					4.0	.2	3.3	.1	7.3	.3
WHOLESALE AND RETAIL TRADE	3,336.2					18.3	.5	14.4	.4	32.6	1.0
SERVICES	3,240.7					17.9	.5	14.3	.4	32.2	1.0
ALL OTHER SECTORS	11,057.8										
TOTAL	\$25,661.9	\$ 1.9	*	\$137.8	0.5%	\$89.8	.3%	\$71.2	.3%	\$300.6	1.2%

*Negligible

TABLE S-5

**UNITED STATES INDUSTRIAL OUTPUT DIRECTLY ATTRIBUTABLE
TO PUBLIC LANDS, 1963 AND 1980**

(Millions of 1963 Dollars at Producers' Prices)

SECTOR	TOTAL 1963 OUTPUT	PUBLIC LAND OUTPUT	PERCENT OF SECTOR	PERCENT OF TOTAL (ALL SECTORS)
AGRICULTURE	26,098	*	*	*
LIVESTOCK	27,251	327	1.2	.03
FORESTRY	1,911	428	22.4	.04
FUEL MINERALS	15,189	1,185	7.8	.12
NON-FUEL MINERALS	5,085	122	2.4	.01
FISHERIES	1,437	-	-	-
CONSTRUCTION	82,263	-	-	-
MANUFACTURING	399,512	1,660	.4	.17
TRANSPORTATION, PUBLIC UTILITIES	83,437	172	.2	.02
TRADE	118,296	415	.4	.04
FINANCE, INSURANCE, REAL ESTATE	115,845	-	-	-
SERVICES, ETC.	113,657	653	.6	.07
GOVERNMENT ENTERPRISES	12,085	-	-	-
TOTAL	1,002,102	4,962	-	.5%

* Negligible

SECTOR	TOTAL 1980 OUTPUT	PUBLIC LAND OUTPUT	PERCENT OF SECTOR	PERCENT OF TOTAL (ALL SECTORS)
AGRICULTURE	39,420	*	*	*
LIVESTOCK	37,438	327	.9	.02
FORESTRY	2,877	644	22.4	.04
FUEL MINERALS	22,106	1,724	7.8	.12
NON-FUEL MINERALS	7,529	181	2.4	.01
FISHERIES	2,152	-	-	-
CONSTRUCTION	130,490	-	-	-
MANUFACTURING	639,867	3,998	.6	.27
TRANSPORTATION, COMMUNICATION, PUBLIC UTILITIES	139,220	413	.3	.03
TRADE	177,431	998	.6	.06
FIRE	198,063	-	-	-
SERVICES, ETC.	182,933	1,561	.9	.10
GOVERNMENT ENTERPRISES	19,579	-	-	-
TOTAL	1,105,105	9,846	-	.5%

* Negligible

ESTIMATING IMPACTS OF CHANGES IN PUBLIC POLICY

To evaluate the impact of a change in public policy the following procedure was used: (1) a hypothetical policy change was specified by the PLLRC, (2) the share of output of directly affected industries attributable to public lands was determined, (3) the proposed policy change was quantified, (4) changes in the outputs of directly affected industries were estimated, and (5) all direct and indirect effects on immediate output and final sales were estimated.

The Public Land Law Review Commission specified fourteen hypothetical policy changes affecting use of public lands. Nine changes applied to the Upper Colorado River Basin, and five to Washington. (See table S-6 for a summary description of each.)

TABLE S-6
BRIEF DESCRIPTION OF HYPOTHETICAL POLICY CHANGES
ON FEDERALLY MANAGED PUBLIC LANDS ^{a/}

DESIGNATION ^{b/}	DESCRIPTION
CA	Increase livestock carrying capacity of all public range lands by 50 percent.
CB	Increase livestock carrying capacity on BLM administered lands by 25 percent.
CC	Develop oil shale industry in Upper Main Stem with a capacity of 250,000 barrels per day.
CD	Develop oil shale industry in Upper Main Stem with a capacity of one million barrels per day, and in Lower Main Stem with a capacity of 50,000 barrels per day.
CE	Reduce by 25 percent 1980 projected increases in output of Other Minerals on National Forests in Upper Main Stem and San Juan.
CF	Increase big game carrying capacity by 30 percent.
CG	Increase resident use of winter sports facilities by five percent, and non-resident use by two percent.
CH	Reallocate eight percent of BLM administered grazing lands in Upper Main Stem, and five percent in San Juan and the Green to intensive agriculture.
CI	Develop pulp and paper industry in Green with 500 ton per day capacity.
WA	Nullify anticipated allowable timber cut increases between 1963-1980. Even flow strictly enforced.
WB	Increase timber by 30 percent.
WC	Restrict log exports to 200 million board feet per year.
WD	Five percent of commercial forest land withdrawn for exclusive recreational use.
WE	Establish scenic easements on roads through five percent of commercial forest land. Timber cut in affected areas reduced by 20 percent.
^{a/} Effective date of policy change is 1963. Impacts are estimated in terms of adjustments in economies in 1980. (See table S-7.) ^{b/} C prefix indicates Colorado. W prefix indicates Washington.	

Data limitations necessitated that policy changes are assumed to have been adopted in 1963. Effects of changes in policies were estimated in terms of impacts on project economies of the two regions in 1980. In other words, what adjustments must be made in existing economic projections to 1980, if the proposed policy change were made in 1963?

Two proposed policy changes involve new industries rather than marginal changes in outputs of existing industries. One involves the development of an oil shale industry, the other would result in the construction of a new pulp and paper industry. Both new industries are assumed to be located in the Upper Colorado River Basin.

PUBLIC POLICY ALTERNATIVES

Colorado Policy Alternative A

Assume the Federal government adopts a policy of substantially increased investment in range lands. The increased investment will increase the carrying capacity of affected range lands by 50 percent. Increased capacity is assumed to be used in the same proportion as previously projected for 1980, hence increases in livestock production (sheep and cattle) will be proportionate to increased investment.

This policy would lead to an initial increase in the output in the Range Livestock sector in the Upper Main Stem of \$9.6 million. Increased private feed would be required to supplement increased public feed. As existing agricultural land is reallocated to grazing, output of the Dairy industry would be expected to decline by \$0.8 million. Output of Food and Field Crops would decline by \$2.1 million.

Due to the changed demand for inputs, and related effects, combined impacts on total output of the Upper Main Stem would be an increase of \$10.8 million. This is 1.3 percent above original 1980 projections. This increase in total output would be accompanied by an increase in employment of approximately 2,000 (3.4 percent), and an increase in regional income of \$9.6 million (1.7 percent).

In the San Juan Sub-basin, the initial effect would be to increase Range Livestock by \$1.4 million, and to decrease Dairy and Food and Field Crops outputs by \$40,000 and \$60,000, respectively. Total change in San Juan output would be an increase of \$2.5 million (0.3 percent). Total employment would increase by 290 (0.7 percent), and regional income by \$2.3 million (0.4 percent).

The policy's impact on the Green River Sub-basin would be an initial increase in output of Agriculture by \$3.0 million. Direct, indirect, and induced impacts would increase total Green River output by \$4.7 million (0.7 percent). Employment would be increased by 418 (1.1 percent), and regional income by \$3.5 million (0.8 percent).

Colorado Policy Alternative B

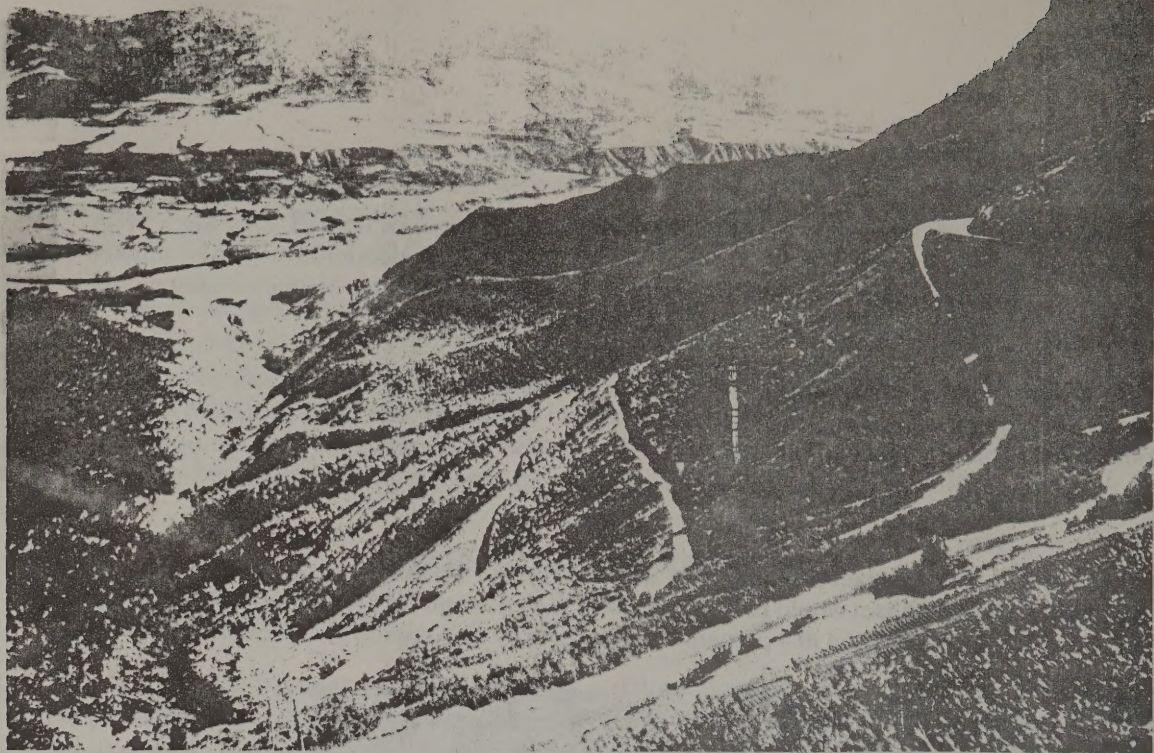
The level of investment in grazing lands administered by the Department of the Interior is assumed to be increased. As a result, USDI grazing would be 25 percent above the previously projected base for 1980. Grazing on lands administered by the Department of Agriculture is assumed to remain at 1963 levels.

If this policy alternative were adopted, output of Range Livestock in the Upper Main Stem Sub-basin is estimated to increase by \$1.0 million above 1980 base projections. The total impact would be an increase in sub-basin output of \$2.1 million (0.2 percent). Sub-basin employment would increase by 241 (0.4 percent), and income by \$1.5 million (0.3 percent).

In the San Juan Sub-basin, Range Livestock would increase by \$444 thousand. Because of decreased availability of feed, Dairy and Field Crops would decline by \$20 thousand and \$30 thousand, respectively. Total impact on San Juan output would be an increase of \$746 thousand (0.1 percent). Employment would increase by 83 (0.2 percent), and income by \$677 thousand (0.1 percent).

The policy's initial impact on the Green River Sub-basin would be an increase in Agriculture by \$1.1 million. Total impact would be an increase in Green output of \$1.7 million (0.2 percent). Employment would increase by 154 (0.4 percent), and income by \$1.3 million (0.3 percent).





Colorado Alternative C

Policy Alternative C is based on the assumption an oil shale industry is developed in the Upper Main Stem Sub-basin. Output is assumed to be 250,000 barrels per day.

Output of the new oil shale industry would add \$90 million (15.6 percent) directly to value added (income) in the Upper Main Stem. The new facility would employ 3,588 persons. The total impact on the sub-basin would be an increase in aggregate output of \$2.65 million (30.8 percent). Total sub-basin employment would increase by 6.4 thousand (11.4 percent), and income would increase by \$129 million (22.3 percent).

Colorado Alternative D

Alternative D is similar to Alternative C. It also involves the development of a new oil shale industry. Both the Upper Main Stem and Green River Sub-basins would be affected. Output is assumed to be one million barrels per day in the Upper Main Stem, and 150,000 barrels per day in the Green River Sub-basin.

The initial impact on the Upper Main Stem would be an additional output of \$865 million in the Oil Shale industry. Employment in Oil Shale would be 13 thousand.

Indirect and induced effects would increase total output of the sub-basin by \$1.1 billion (123.1 percent). The full impact of the new industry would involve employment increases of 28 thousand (51.4 percent). Sub-basin income would increase by \$450 million (77.9 percent).

Because of the smaller size of the projected Oil Shale industry, the impact on the Green River Sub-basin is obviously less. Oil Shale output would be \$130 million and employment in the new industry would be 2.3 thousand.

Total impact on the sub-basin's economy would be an increase in total output of \$155 million (21.7 percent). Employment would increase by 3.5 thousand (9.2 percent), and income by \$76 million (18.1 percent).

Colorado Policy Alternative E

This policy change pertains to mineral production on National Forests. It is assumed 25 percent of the expected increase in the output of Other Minerals in the Upper Main Stem and San Juan Sub-basins would not be possible. Limitations on mining activities would be imposed on National Forest lands.

Since the output of Other Minerals in the Upper Main Stem was projected to increase by \$1.9 million between 1963 and 1980, this policy would result in a decrease in Other Mining production of \$470 thousand. Total output in the regional economy would decrease by \$795 thousand (0.1 percent). This decline would be accompanied by a decrease in employment of 54 (0.1 percent). Sub-basin income would fall by \$686 thousand (0.1 percent).

In the San Juan, Other Mining output was projected to increase by \$2.7 million between 1963 and 1980. Policy E would result in a decrease in Other Mineral production of \$672 thousand. Total output in the San Juan would decrease by \$1.0 million (0.1 percent). Employment would fall by 47 (0.1 percent), and income by \$663 thousand (0.1 percent).



Colorado Policy Alternative F

Alternative F is based on the assumption that increased investments in big game ranges will increase carrying capacity of the three sub-basins by 30 percent. By increasing the probability of a successful hunt, it is further assumed that resident participation in big game hunting would increase by 20 percent above projected 1980 use. Non-resident big game hunting would increase by 10 percent.

The initial impact on the Upper Main Stem would be an increase in output of \$408 thousand as a result of increased sales to big game hunters. The total impact of the Policy F would be to increase total output in the sub-basin by \$847 thousand (0.1 percent). Sub-basin employment would increase by 76 (0.1 percent), and income by \$581 thousand (0.1 percent).

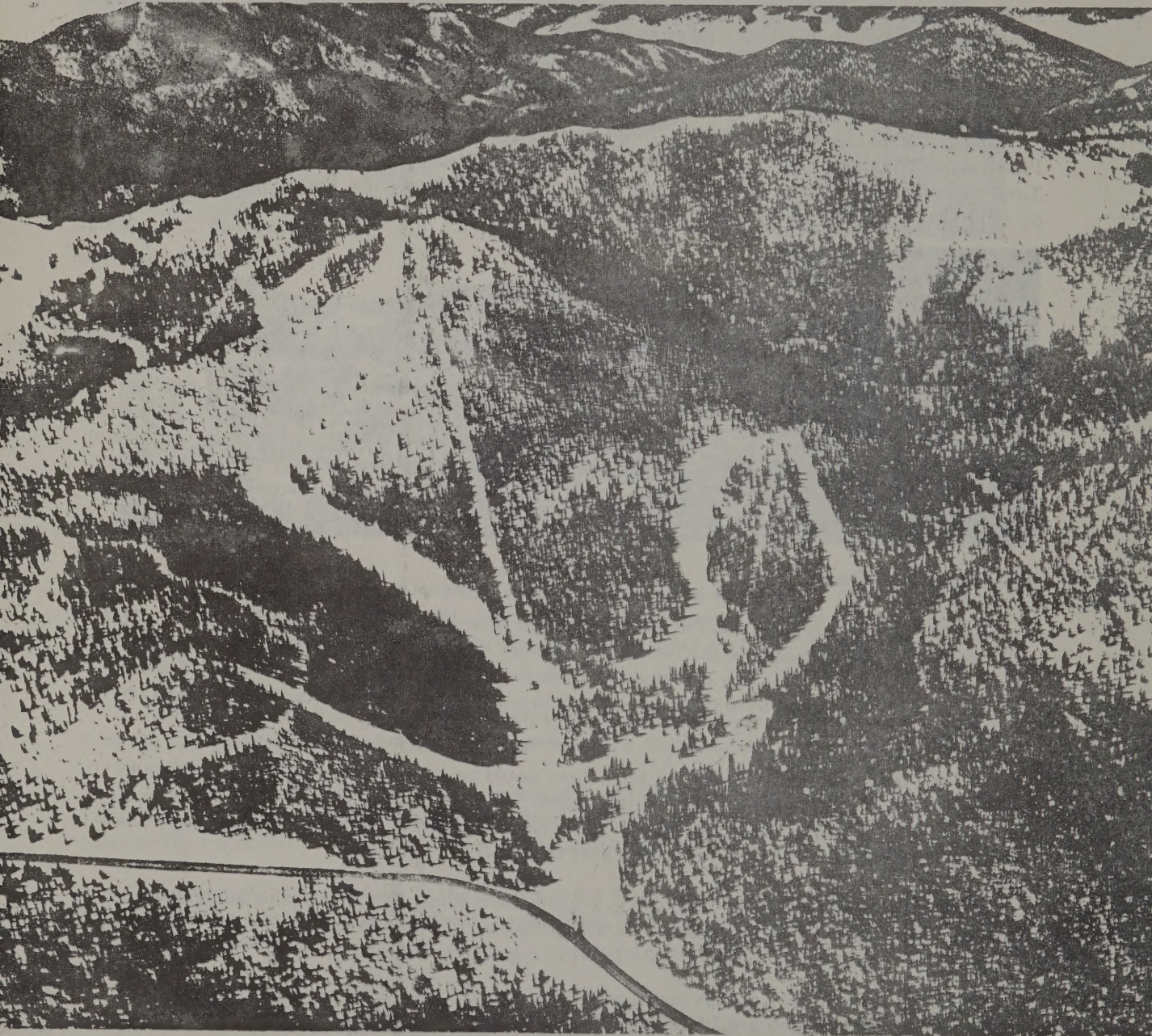
The initial impact on the San Juan, as a result of increased sales to big game hunters, would be an increase of output of \$505 thousand. Total sub-basin output would increase by \$893 thousand (0.1 percent). Employment would increase by 84 (0.2 percent), and income by \$749 thousand (0.2 percent).

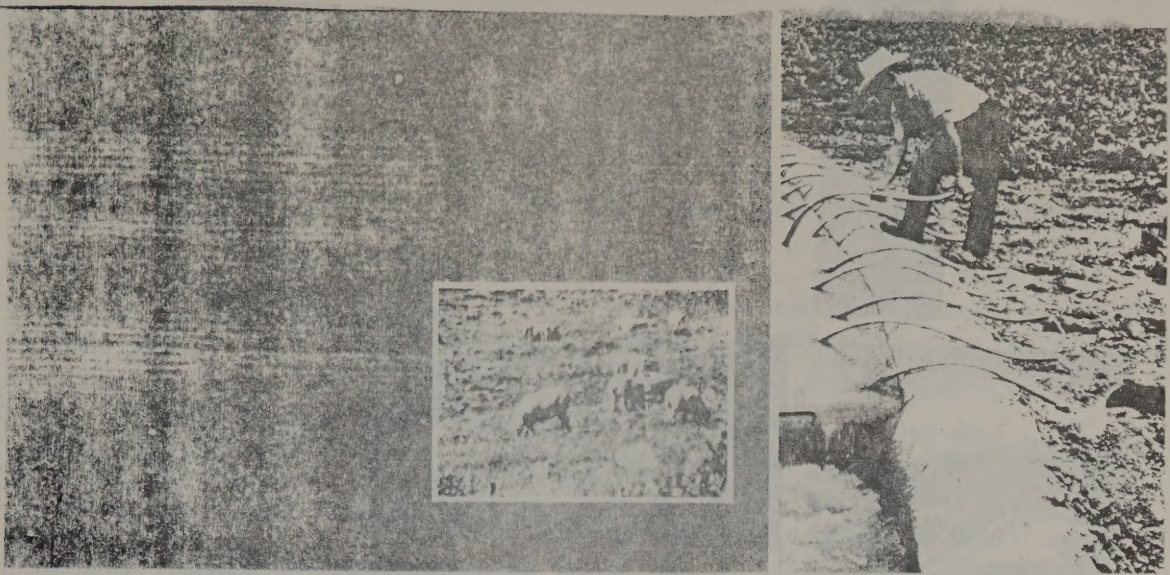
Sales to big game hunters in the Green River would increase output directly by \$544 thousand. Indirect and induced efforts would raise total output by \$939 thousand. Employment would increase by 85 (0.2 percent) and Green River income by \$512 thousand (0.1 percent).

Colorado Alternative G

This alternative would involve increased investments in winter sports facilities in the Upper Main Stem. The result would be to increase resident visits to winter sports facilities by five percent, and non-resident visits by two percent. Assumed increases are above the 1980 projected base.

Skiing is the primary winter sports activity. Increased sales to skiers resulting from this alternative would increase output by \$964 thousand. Total output in the sub-basin would increase by \$1.5 million (0.2 percent). Employment would increase by 135 (0.2 percent), and income by \$958 thousand (0.2 percent).





Colorado Policy Alternative H

A decrease in the use of Bureau of Land Management lands for grazing is assumed. Land withdrawn from grazing would be allocated to other agricultural activities. In the Upper Main Stem, eight percent of grazing district lands would be transferred to agriculture. In both the San Juan and the Green River, five percent would be reallocated. This land would be used for agricultural output in the same proportion as present agricultural land is being used.

The initial impact of Policy H on the Upper Main Stem would be to increase all agricultural production, including the output of Range Livestock. The latter seemingly contradictory result occurs because of the assumption that lands reallocated to agriculture would be managed as intensively as private agricultural lands are currently being managed, particularly through irrigation. Decreased livestock feed from grazing would be more than offset by intensive feed production on the same lands.

Total agricultural output in the Upper Main Stem would increase by \$2.4 million. Total output in the sub-basin would be increased by \$5.4 million (0.6 percent). Sub-basin employment would increase by 560 (1.0 percent), and income would increase by \$4.8 million (0.8 percent).

In the San Juan Sub-basin, total agricultural output would increase by \$2.2 million. Indirect and induced effects would increase total output in the San Juan by \$4.0 million (0.5 percent). Employment would increase by 360 (0.9 percent), and income by \$3.6 million (0.7 percent).

In the Green River Sub-basin, total agricultural output would increase by \$3.8 million. As in the other two sub-basins, livestock, as well as crop production, would be increased. The impact of the policy would be an increase in total output of \$5.9 million (0.8 percent). Employment would increase by 525 (1.4 percent) above the projected 1980 base, and income would increase by \$4.4 million (1.1 percent).

Colorado Alternative I

Alternative I would result in the development of a pulp and paper industry in the Green River Sub-basin. Output of the new plant is assumed to be 500 tons per day.

Output of the pulp and paper mill would be \$17.6 million in 1980. The impact on the sub-basin would increase total output by \$27.0 million (3.8 percent). Employment would increase by 1,630 (4.3 percent), 770 of whom would be employed by the new industry. Sub-basin income would increase by \$12.6 million (3.0 percent) above the projected 1980 base.



Washington Policy Alternative A

If Policy A were adopted in Washington, this would result in restricting public timber cut to the 1963 allowable cut level. Even flow of timber from public lands would be strictly enforced, and the full allowable cut is assumed to be sold annually.

This policy would decrease expected Washington output in the Timber sector in 1980 by seven percent. In addition, outputs of Plywood, Lumber, and Pulp and Paper industries, due to reduced availability of public timber, would decline by \$28.4 million (11.2 percent), \$10.6 million (3.5 percent), and \$34.3 million (3.5 percent), respectively. The total impact of this policy would be a reduction in Washington State's gross output of \$244 million (1.0 percent). Employment would decrease by approximately 15 thousand (1.0 percent), and state income would decrease by \$166 million (1.0 percent).

Washington Policy Alternative B

Under Policy B more intensive management of National Forests would be adopted. Improved technology, shorter rotation periods, improved inventory procedures and related activities are assumed. The result of this policy would permit increases in timber cut on National Forests by 20

percent. Allowable cut is increased an additional 10 percent to permit more rapid harvesting of over-mature timber.

The increase in public timber harvest represents an increase of 8.5 percent in total Washington timber output. Initial effects of Policy B are an increase in the output of the Timber sector by \$39.1 million.

Output of the forest products processing industries would increase by \$88.9 million (4.9 percent). The total impact, due to direct, indirect, and induced effects, would be an increase in Washington gross output of \$296.3 million (1.2 percent). Employment would increase by 18,200 (1.3 percent), and state income by \$234.1 million (1.4 percent).

Washington Policy Alternative C

This policy would restrict log export from National Forests, and other Federal timber lands, to 200 million board feet per year.

The impact of Policy C would be negligible in terms of total output, employment, and income. The major effect of this policy would be to encourage processors to export logs from other than Federal lands, and to increase the use of logs purchased from public lands for local processing. Log substitution of this nature would be virtually certain, in the absence of enforceable restrictions on the substitution of public for private timber in local conversion facilities.

Washington Policy Alternative D

Policy D calls for reallocation of five percent of public commercial forest land to exclusive recreational use. Allowable public timber cut would fall correspondingly. It is assumed that both out-of-state and in-state recreational visits to public lands would increase five percent above 1980 projections.

This policy would reduce output in the Timber industry by \$6.9 million (1.5 percent). Outputs of timber processors would also fall. On the other hand, sales to recreational users of public lands would increase by \$8.4 million (5.0 percent). The net result of these partially offsetting changes would be to decrease total state output by \$29.0 million (0.2 percent), employment by 1.5 thousand (0.1 percent), and state income by \$24.7 million (0.15 percent).

Washington Policy Alternative E

This policy would result in the reservation of scenic easements along public roads in the National Forests. Partial withdrawals would be necessary. A 20 percent reduction on five percent of Federal commercial timberlands is assumed. As a result of the scenic easements, in-state driving for pleasure is assumed to increase by two percent, and out-of-state visits to public lands would increase by two percent.

Policy E would result in a \$1.4 million (0.3 percent) decrease in the output of Timber. Associated decreases in the output of forest products would be \$4.6 million (0.2 percent). On the other hand, sales to recreationists would increase by \$1.4 million (0.8 percent).

The net effects of timber withdrawals for scenic easements are: (1) total state output will decline by \$6.5 million (0.03 percent), (2) 337 jobs would be lost (0.02 percent), and (3) income would decline by \$5.6 million (0.02 percent).

THE IMPACT OF PUBLIC POLICY ON REGIONAL ECONOMIES: SUMMARY

The concept of a public policy multiplier, as used in the present study, involves the ratio of total impact of a policy change to the initial impact of the policy. Total impact includes the "supply" impact, the "demand" impact, and the initial impact. In terms of direct, indirect, and induced effects the multiplier would be:

$$\text{Multiplier} = \frac{(\text{Direct} + \text{Indirect} + \text{Induced Effects})}{\text{Direct Effects}}$$

Multipliers developed for the various policy alternatives and regions are summarized in table S-7.

TABLE S-7

PUBLIC POLICY OUTPUT MULTIPLIERS IN THE UPPER COLORADO RIVER BASIN, 1980 (Thousands of 1963 Dollars at Producers' Prices)

POLICY ALTERNATIVE	SUB-BASIN	INITIAL IMPACT	TOTAL IMPACT	MULTIPLIER
A	UPPER MAIN STEM	\$ 9,630	\$ 10,769	1.1
	SAN JUAN	1,444	2,461	1.7
	GREEN RIVER	2,980	4,683	1.6
B	UPPER MAIN STEM	1,022	2,092	2.0
	SAN JUAN	444	746	1.7
	GREEN RIVER	1,109	1,738	1.6
C	UPPER MAIN STEM	216,344	265,247	1.2
D	UPPER MAIN STEM	865,374	1,060,954	1.2
	GREEN RIVER	129,645	154,787	1.2
E	UPPER MAIN STEM	-470	-795	1.7
	SAN JUAN	-672	-1,038	1.5
F	UPPER MAIN STEM	408	847	2.1
	SAN JUAN	505	893	1.8
	GREEN RIVER	544	939	1.7
G	UPPER MAIN STEM	964	1,518	1.6
H	UPPER MAIN STEM	1,480	5,382	3.6
	SAN JUAN	1,377	3,986	2.9
	GREEN RIVER	3,750	5,896	1.6
I	GREEN RIVER	17,571	27,029	1.5

TABLE S-7 (Cont.)

PUBLIC POLICY MULTIPLIERS IN WASHINGTON STATE, 1980
(Dollars)

	INITIAL IMPACT	SUPPLY IMPACT	DEMAND IMPACT	TOTAL IMPACT	MULTIPLIER
PUBLIC TIMBER	\$ 1.0	\$ 2.3	\$ 4.3*	\$ 7.6	7.6
PUBLIC RECREATION	1.0	---	1.6	2.6	2.6

*In Response to Both Initial and Supply Impacts.

In the upper Colorado River Basin, "supply" impacts were of minor importance. This is because much of the output of public lands is exported elsewhere for processing. Initial, and demand, impacts are most important in an economy of this kind.

Washington State, on the other hand, processes most of its raw materials locally. Supply impacts are important, therefore, and contribute significantly to the size of Washington's multiplier for changing timber supply.

Public policy multipliers in the Upper Colorado River Basin were small, ranging from a low of 1.3 to a high of 3.7. Only four of the nineteen multipliers were over 3.0. Three were less than 2.0. Most were between 2.0 and 3.0.

Basically, there are two multipliers for Washington. Each policy alternative represents either one multiplier or a weighted combination of the two, depending upon the extent to which timber and recreational sales are affected. Policy changes involving only recreational use, i.e., increased sales to recreational users of public lands, had a multiplier effect of 2.6. If increased recreational sales reduced timber output, this multiplier would be reduced accordingly.

Timber output changes had a multiplier effect of 7.6. The larger size of the multiplier is primarily a result of the "forward-linked" effects of changing the timber supply. The size of the timber multiplier clearly indicates the significance that public timber harvest has for the stability of Washington's economy, and its growth and development. In other words, the larger the multiplier, the more leverage public policy has on an economy.

CHOOSING AMONG ALTERNATIVE USERS OF PUBLIC LANDS

The basic problem of managing public lands is to determine courses of action which will maximize social benefits provided by those lands. Benefits include monetary receipts from the sale of forage, leasable minerals, timber, etc., and benefits for which the public usually does not pay user fees. Certain kinds of outdoor recreation are in the latter category. These activities are usually financed by taxes. In the event benefits for which no charges are made can be measured, each public agency can draw up a schedule of programs which indicate both total imputed returns and total costs associated with each. The program which yields the greatest difference between the two would be the appropriate course of action.

If two programs yield identical profits in the sense described, other criteria are obviously necessary to decide a course of action. One program might generate a higher level of employment

in a period of unemployment. The same program might result in undesirable inflationary pressures if the economy is fully employed and regional land prices are rising.

Other examples are programs which result in higher per capita income for the region; other alternatives might involve no change or a decrease. One program might involve reallocation of labor, for example, from agriculture to lumber production. Another might shift school teachers to jobs as interpretive specialists. Examples of secondary decision criteria are endless. Those considered most important depend on individual agency policy.

Subject to certain qualifications, multipliers can provide valuable information to policy makers in deciding among a number of policy alternatives.

It is somewhat misleading to interpret multiplier differential in a relative sense. Washington's economy is more highly developed than the Upper Colorado River Basin, hence it has greater flexibility with respect to absorbing economic impacts. Labor unemployed as a result of a policy change in Washington would have greater opportunity for reemployment in other industries than unemployed labor in the Upper Colorado River Basin. Occupational mobility within a region tends to be greater than geographical mobility between regions.

Sizes of multipliers also suggest nothing about relative economic feasibility of policy alternatives. A policy change involving a small multiplier may very well be a more economical use of resources than one that is larger. If costs of two alternatives are the same, the alternative with the larger multiplier might be preferred. Even this generality might be negated by differential labor requirements for the two alternatives, and possible interregional redistribution effects.

The latter problem is particularly acute if the national economy is at the full employment level. Increasing output in one area may merely result in a reduction of output elsewhere, and possibly inflationary price increases. While this may benefit some in the area that expands, the entire nation is unlikely to be better off. Indeed, regional instabilities could be precipitated in a number of areas by adopting expansionary policies in a region where the overall economy is fully employed.

NATIONAL AND REGIONAL IMPLICATIONS OF PUBLIC POLICY

Approximately one-third of the United States' land area is publicly owned. When the Federal government initiates policy changes, there is obvious interest in the repercussions of these changes nationally as well as in the State of Washington and the Upper Colorado River Basin.

Public Lands in the United States: 1963 and 1980

The Eleven Western States and Alaska generate about 20 percent of national income. Public lands account for about 2.4 percent of this amount. More than 95 percent of all public lands are in the latter twelve states, and about 95 percent of the economic activity attributable to public lands takes place in those same twelve states. Although public land outputs account for an insignificant portion of the rest of the country's income, public policy does have effects on non-public land states (states other than the Eleven Western States and Alaska). Moreover, the importance of public land outputs to the economy are usually underestimated. Manufacturing industries which rely on raw materials provided by public lands are also partially dependent upon those lands. This is especially true of Oil Refining, Forest Products and Food and Kindred Products industries.

Overall, public lands supported 0.5 percent of national income in 1963. Public lands are expected to support 0.7 percent of the nation's total output in 1980, a 40 percent increase in their relative importance since 1963. No significant changes in the amount, and type, of land owned by the public are assumed.

Most of the projected increase between 1963 and 1980 is expected to result from increased recreation expenditures on public lands. These expenditures are projected to increase from \$2.9 billion to about \$7.0 billion in 1980. Sales to Manufacturing, Transportation, Trade and Service industries are also expected to rise proportionately. The greatest increase in relative importance will be in the Trade sector, where recreation expenditures are anticipated to account for 1.3 percent of total sales in 1980. This is an increase from 0.4 percent in 1963. Sales of raw materials from public lands are also expected to increase, but relatively less than recreation.

The declining relative importance of raw materials produced on public lands is due to a shift from manufactured goods to services as national income rises. The relative importance of recreation on public lands will rise as income increases, hence public policy concerning recreational activities will become increasingly important to the economy. This is especially true in the Eleven Western States and Alaska where impacts of changes in public policy will be greatest.

A change in public policy regarding the supply of raw materials from public lands, or the availability of recreation opportunities, can have multiple, and far-reaching, effects on the regional economy involved. The magnitude of the effects is obviously related to the size of the output change resulting from a policy decision.

The effects of a change in public policy in a regional economy, such as one of the three sub-basins in the Upper Colorado River Basin, is not likely to be felt at the national level. Whatever influence public policy can have on the economies of those regions will involve insignificant adjustment problems elsewhere in the nation.



The same is true for marginal changes in public policy in Washington. However, if policies assumed in the present study for Washington State or the Upper Colorado River Basin were applied to all public lands, the impact of each policy alternative would be considerably different. Output changes could be quite sizeable, and could increase or decrease national output significantly. Changes in the output of commodities produced in public land states would have greater impact on producers in non-public land states.

If significant increase in the total national output of a commodity were made, the price of that commodity might have to fall in order to clear markets. If the price of a commodity were forced down as a result of public policy changes, producers in non-public land states might be forced to reduce output. Whether reductions in output would be equal to output increases on public lands states is difficult to estimate a priori. Price adjustments could, in turn, effect outputs of substitute materials.

Full impacts of significant policy changes might require considerable interregional migration. If a policy change expanded output, industries would have to find new employees to increase production. Additional employees would have to come either from other industries or other regions.

The overall impact of a policy change which significantly increases (decreases) the supply of public land inputs (raw materials) can be summarized as follows:

1. The output of products dependent upon inputs from public lands will increase (decrease).
2. Outputs of products dependent upon inputs from private lands may decrease (increase).
3. Total output of products in question will probably increase (decrease), and this may cause price reductions (increases).
4. Interindustry or interregional migration of labor may result for either an increase or decrease in public land output.
5. If interregional or interindustry migration does not occur, or if unemployed resources are not available with which to implement an expansionary policy, the full impact of the policy change will not be felt.

Quantitative estimates of the extent to which these changes will occur will depend, of course, on specific policy changes and the state of the overall economy at the time the policy change is made.

CHAPTER I

INTRODUCTION

The Public Land Law Review Commission: Background and Purpose

Public lands in the United States comprise approximately one-third of our land area. In recent years increased demands have been made on these lands. As a result, their management has attracted increasing public attention.

Conflicts over the management of public lands are particularly acute between those who favor setting aside larger areas in the interests of "conservation" and those who favor development and resource exploitation, and between those who favor retention and those who favor disposal of public lands. In an attempt to resolve some of these conflicts, the Congress of the United States established the Public Land Law Review Commission.

The Public Land Law Review Commission, established by the Act of September 19, 1964, (78 Stat. 982, 43 U.S.C. §§ 1391-1400 (1964)), as amended by the Act of December 18, 1967, 43 U.S.C.A. § 1394 et seq. (February 1968 Pamphlet) has the statutory responsibility to: (1) "study existing statutes and regulations governing the retention, management, and disposition of the public lands;" (2) "review the policies and practices of the Federal agencies charged with administrative jurisdiction over such lands insofar as such policies and practices relate to the retention, management, and disposition of these lands;" and (3) "compile data necessary to understand and determine the various demands on the public lands which now exist and which are likely to exist in the foreseeable future."

Objectives of the Study

The present study is one of a series designed to help implement the Commission directive to recommend to the

President and the Congress "...such modifications in existing laws, regulations, policies and practices as will, in the judgment of the Commission, best serve to carry out the policy" that "the public lands of the United States shall be (a) retained and managed or (b) disposed of, all in a manner to provide the maximum benefit for the general public." A better understanding than we now have of the relative importance of major uses of public lands to local and regional economies is obviously of foremost importance to the Commission.

Specifically, the objectives of the present study are to:

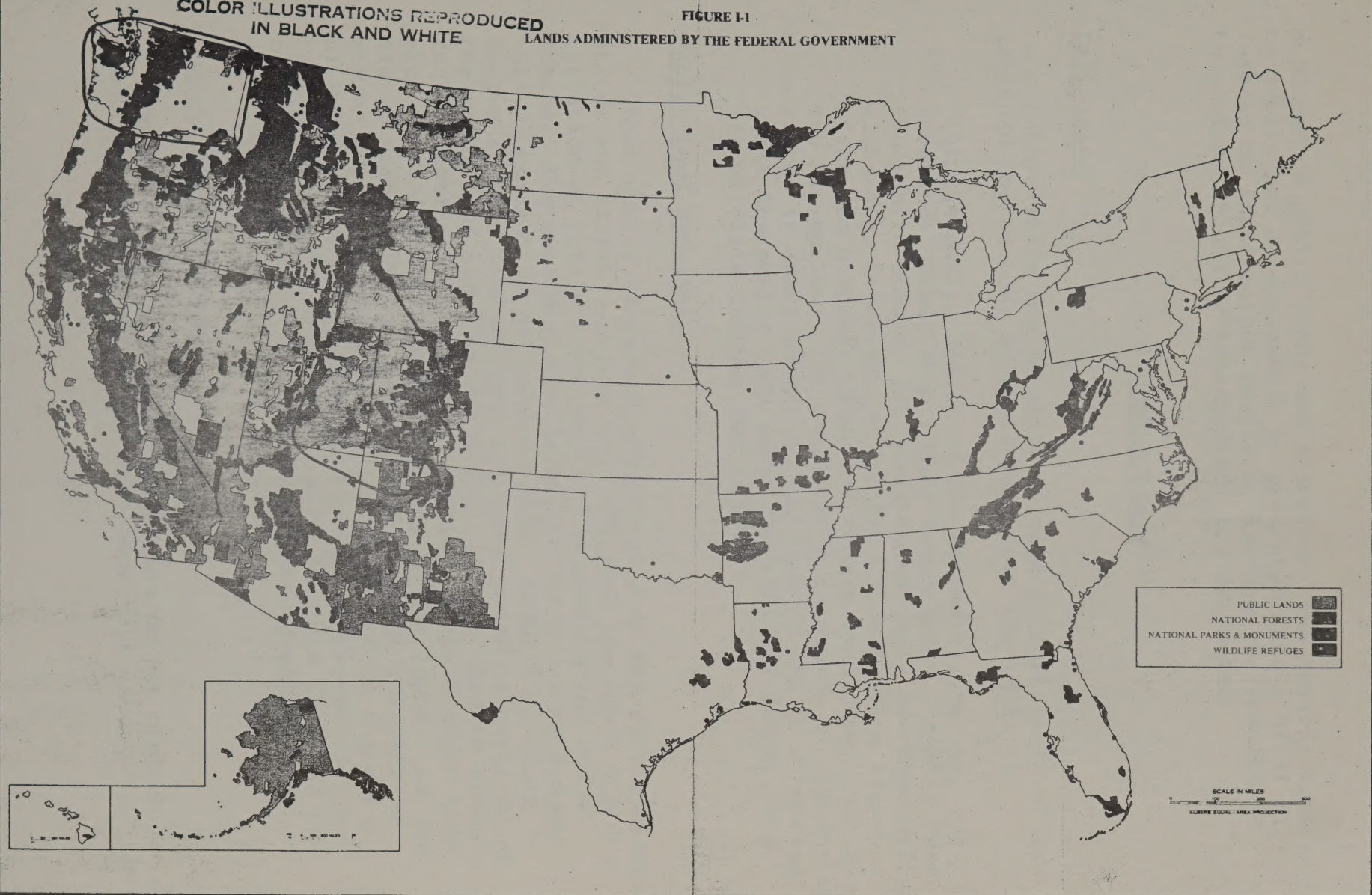
- (1) Compare the importance of major commodities of public lands (timber, forage for domestic livestock, energy fuels, non-fuel minerals, outdoor recreation, and intensive agriculture) for the regions indicated, and, to the extent possible, for the United States as a whole.
- (2) Determine the importance of outputs from public lands in 1963 on the economies of Washington, and a selected portion of the Colorado River Basin.
- (3) Describe the direct and indirect effects of public land output on other sectors of the regional economies indicated above.
- (4) Provide projections to 1980 of the overall and relative importance of outputs of public lands in the economies of the specified regions.
- (5) Determine the impact of incremental changes in the level of specific outputs of public lands on the economies of the indicated regions.
- (6) Based on the results obtained in (1) to (5) above, and on other relevant information, evaluate the role of public lands in both local and regional economies.

Background information to the present study is presented on the following pages. Public lands are defined; commodities

COLOR ILLUSTRATIONS REPRODUCED
IN BLACK AND WHITE

FIGURE I-1

LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT



A.

B.

produced on public lands are described; the general approach to public policy evaluation is presented; and a brief discussion of input-output analysis, and how the results of this study should be interpreted, are presented.

Public Lands

Definition

Public lands are formally defined in Section 10 of Public Land Law 88-606, approved September 19, 1964, as:

"(a) the public domain of the United States; (b) reservations, other than Indian reservation, created from the public domain; (c) lands permanently or temporarily withdrawn, reserved, or withheld from private appropriation and disposal under the public land laws, including the mining laws; (d) outstanding interests of the United States in lands patented, conveyed in fee or otherwise, under the public land laws; (e) national forest; and, (f) wildlife refuges and ranges."

Public Land Ownership

Most public lands are concentrated in the Eleven Western States and Alaska. Figure I-1 indicates the types and distribution of public lands within the continental United States. The twelve states listed in table I-1 hold more than 95 percent of all public lands. Indeed, to those twelve states, public lands represent sizeable portions of the total land area in each state. Public land in Alaska, for instance, represents 97.9 percent of the state's land area as well as 48.7 percent of all public lands. In the Eleven Western States, public lands account for varying shares of state land areas. They represent 86.6 percent of Nevada's land. In Washington, they represent 26.7 percent of the land. However, it will be shown later in the study that acreage is not the sole determinant of the importance of public lands in a region.

Output of Public Land

For the most part, public agencies do not produce final products. Recreation is the most important exception. Land

TABLE I-1

FIRST TWELVE STATES AS LARGEST HOLDERS OF FEDERALLY OWNED ACREAGE, 1966

(Millions of Acres)

<u>State</u>	<u>Total Land: Public And Private</u>	<u>Public Land (Sec. 10)</u>	<u>Percent Total State Land</u>	<u>Percent Total Sec. 10 Land</u>	<u>Accumulated Percent of Total (Sec. 10)</u>
Alaska	365.5	358.0	97.9%	48.7%	48.7%
Nevada	70.3	60.9	86.6	8.8	57.0
California	100.2	42.5	42.4	5.8	62.8
Utah	52.7	34.9	66.2	4.8	67.6
Idaho	52.9	33.6	63.5	4.6	72.2
Arizona	72.7	32.2	44.3	4.4	76.6
Oregon*	61.6	29.7	48.2	4.0	80.6
Wyoming	62.3	29.3	47.0	4.0	84.6
New Mexico	77.8	25.4	32.6	3.5	88.1
Montana	93.3	25.3	27.1	3.4	91.5
Colorado	66.5	23.1	34.7	3.1	94.6
Washington	42.7	11.4	26.7	1.6	96.2
All Other States	1,152.9	28.2	2.4	3.8	100.0%
Total	2,271.4	734.3	32.3%	100.0%	

SOURCE: Table I, "Public Land Acreages by Agencies and by States, 1966";
p. 1, prepared by the Public Land Law Review Commission, October 31, 1968.

* Excludes 2,070,745 acres of Oregon and California Railroad and 74,530 acres of Coos Bay Wagon Road lands.

is leased, or commodities existing on public lands are sold to private enterprise to be used as inputs in the private production of various commodities. In the list that follows, commodities supported in part by some input from public lands are indicated.

1. Intensive Agriculture (SIC 011, 012, 014, 019)^{1/}

This industry includes the production of cotton, grains, fruits, nuts, vegetables and miscellaneous specialized agricultural products such as mushrooms and flower seeds. The Federal government's role in this industry is that it may occasionally lease land for use in Intensive Agricultural activities. For purposes of the present study, the public output of Intensive Agriculture will be considered that portion grown on lands leased from the Federal government.

2. Livestock and Livestock Products (SIC 013)

This industry is defined as including all dairy and poultry farms and livestock farms engaged in the production of cattle, sheep, hogs, and so forth. The Federal government, through the sale of grazing permits, supports range cattle and sheep by supplying a portion of the feed requirements. The Federal government is not actively engaged in the production of livestock animals.

3. Fuel Minerals (SIC 11, 12, 13)

This industry includes the extraction of anthracite and bituminous coal, lignite, crude petroleum and natural gas. In the present study the extraction of leasable minerals, as covered by the Mineral Leasing Act of 1920 and other related statutes, is considered the public output of Fuel Minerals. Locatable minerals are not included. The Federal government does not participate directly in mining activity.

^{1/} The SIC code of an industry is the identification provided in the Standard Industrial Classification Manual published by the Executive Office of the President, Bureau of the Budget, 1957. The classifications cannot be entirely accurate, but the system provides the best standardized method for classifying industries developed to date.

4. Non-Fuel Minerals (SIC 10, 14)

Firms classified in this industry are primarily concerned with the extraction of metals (such as iron, copper, bauxite, uranium, etc.) and non-metallic minerals (such as sand and gravel, clay, chemicals, and so on). As with fuel minerals, the output of leasable minerals is considered output even though the Federal government does not directly extract those minerals. Locatable minerals are not considered in the present study.

5. Timber (SIC 08, 2411)

Those firms classified as SIC 08 are primarily engaged in the growing and selling of timber. Firms classified as SIC 2411 are primarily concerned with the cutting and removal of timber. These two classifications were combined to create an industry analogous to the mining industries defined above. The Federal government participates in this industry by selling standing timber to private loggers and processors. Even though financial arrangements vary among agencies, e.g., the U. S. Forest Service and the Bureau of Land Management, most timber is removed from public lands by private operators, who either sell or further process it themselves. That portion of total forestry and logging (timber) output which comes from public lands, is considered public land output in the present study.

6. Recreation (No SIC Code)

Recreation is not easily defined and, as yet, has no specific SIC code definition. Indeed, recreation, as an opportunity or activity, is not generally classified as a "commodity." Nevertheless, public lands, especially National Parks and National Forests, provide a wide variety of recreational opportunities. Moreover, public recreational facilities usually have no, or only nominal, user fees.

If regional public lands attract recreational users, these lands do have an impact on the regional economy, even though the direct use is not measured in economic terms. Non-resident visitors, as well as resident visitors who might recreate elsewhere in the absence of local recreational facilities, purchase food, transportation, lodging and related amenities. In the present study recreational

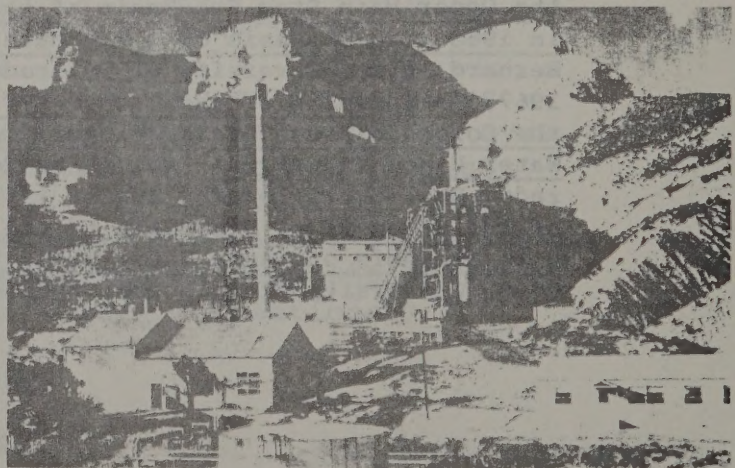
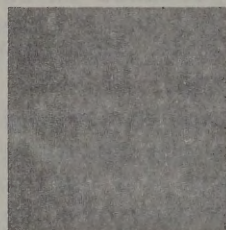
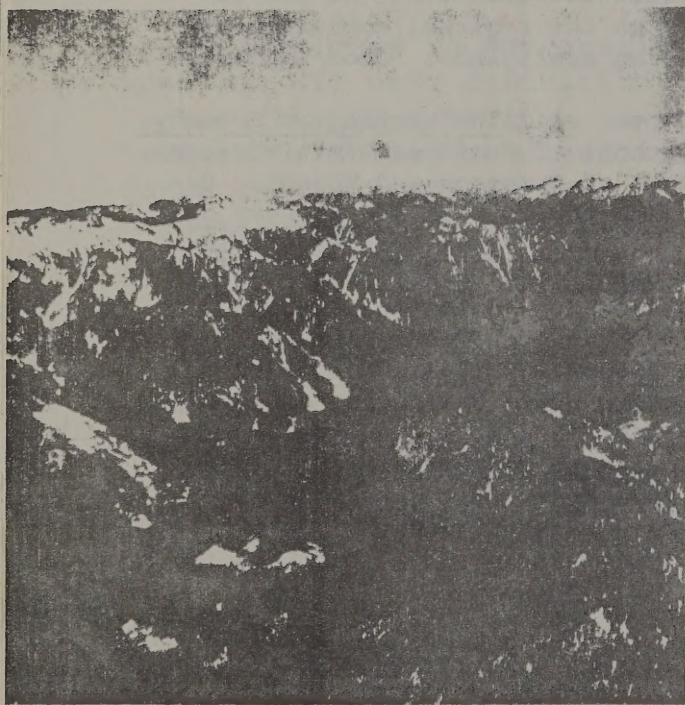
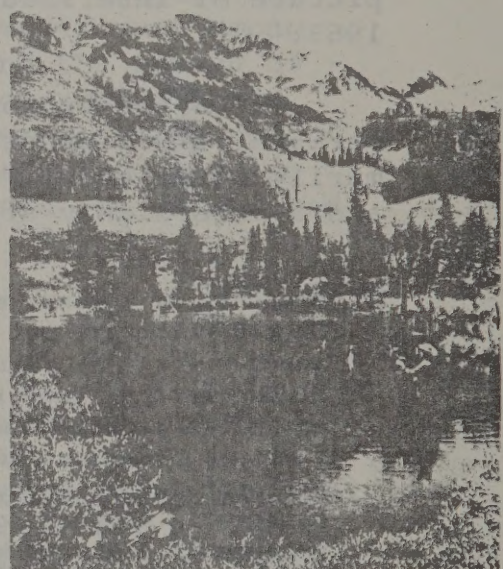
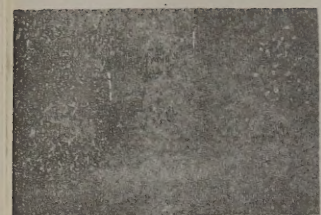
expenditures for a region are sales associated with the recreational use of regional public lands.

The Study Regions

Two regions were selected in which to investigate the economic impact of public lands and policy changes: Washington State and the Upper Colorado River Basin--including the Green, the Upper Main Stem, and the San Juan Sub-basins. An analysis of these two areas was desirable to the Public Land Law Review Commission for a number of reasons. All six of the commodities listed above are produced in either one or both of the regions.^{2/} More importantly, economic activities in both regions have been described in published input-output tables.^{3/} These studies give a relatively accurate picture of interindustry relationships in each region for 1963.

These two regions also permit an evaluation and comparison of differential effects of policy changes on a primarily rural economy--the Upper Colorado River Sub-basins--and a more highly urbanized economy--the State of Washington.

- ^{2/} Products of Intensive Agriculture (SIC 011) are the only commodities listed which are not produced in significant quantities on public lands. For this reason, their effect on the regional economies included in the study is regarded as being negligible. Good empirical estimates cannot be made.
- ^{3/} Philip J. Bourque, Edward J. Chamber, et. al. The Washington Economy: An Input-Output Study, the Graduate School of Business Administration, University of Washington and Department of Commerce and Economic Development, State of Washington, 1967; An Analysis of the Economy of the Upper Main Stem Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967; An Analysis of the Economy of the San Juan River Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967; and An Analysis of the Economy of the Green River Sub-Basin of the Colorado Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967.



Economic projections for both regions have been made to 1980. Economic projections have also been prepared for the United States to 1975 by Clopper Almon, Jr.^{4/} His 1975 projections have been extended to 1980 in the present study. These 1980 projections serve two purposes: (1) changes in the importance of public lands to regional and the national economies are projected, and (2) possible policy changes can be evaluated in terms of departures from these projections.

The Economic Impact of Public Land Management Policy

Each year Federal agencies face a number of decisions involving the disposition and management of public lands. How much timber will be sold? Should the number of grazing rights be increased or decreased? Should mining be allowed in National Parks and National Forests? Should any holdings be sold or new land acquired? Should land exchanges be made?

Answers to these questions depend on a number of further considerations. For example, is a policy profitable? How might changes in management affect the public interest? Will policy changes affect communities within, or adjacent to, an area?

The task of the present study is to estimate the present and future role of the public lands and the "impacts" of a number of hypothetical public policy changes on employment and income in two regional economies. Estimates of these kinds can offer insights into the effects of similar policy changes on other regions of the United States. Indeed, in Chapter IV it is indicated how public policy can have substantial effects in regions which possess relatively minor holdings of public lands.

Impact: A Definition

The word "impact" is commonly used to denote effects, pressures, adjustments, and other types of responses. For

^{4/} Almon, Clopper, Jr., The American Economy to 1975, Harper and Row, 1966. See also Appendix D.

example, the impact of defense expenditures commonly implies an economy quite different with defense expenditures than it would be without them.

One might consider the impact of public instruction on moral codes and our social sense of responsibility. The impact of improved law enforcement might be a lower crime rate.

In the present study the term impact is used to mean the adjustment burden placed on an economy resulting from a policy change. Specifically, the objective is to estimate changes in output, value added, and employment in affected industries, but not of individual firms or other economic units. An example of considerable contemporary interest might be the withdrawal of a forested area from timber production to be used exclusively for recreation. What would such a withdrawal do to output in the logging, timber, plywood and pulp industries? How much would employment fall in each of these industries, and how much would it expand in the service trades?

It should be emphasized that adjustment burdens involve estimated changes in output, and resultant reallocation of resources required, under relatively restrictive, static assumptions. In a dynamic economy, particularly one at, or near, full employment, considerable uncertainty would exist about the extent to which the full effects of the estimates would be realized. Moreover, any unemployment that might result should be assumed to be temporary. Unemployed labor resources do have mobility, although it may vary widely among particular kinds of unemployment. Wage rate adjustments provide another means whereby unemployed labor may be reemployed. Input-output analysis does not indicate the type of readjustment mechanism likely to result, but rather the "before" and "after" states of the economy.

One further point needs to be emphasized regarding the economic impact of public land ownership. Ownership per se has an impact only if management decisions differ significantly among ownerships. For example, timber cut from public lands contributes significantly to the nation's forest products supply. This same timber would have approximately the same impact if it were sold by private operators rather than public officials. Ownership impacts would arise because

of differential behavior on the part of public and private timber managers.

Public agencies undoubtedly manage land differently than private owners. Nevertheless, in the present study these differences are assumed to be minimal, and public ownership per se does not cause any impact. Public ownership is important only insofar as policy changes are made which change resource supply conditions. These changes might involve goods or services supplied to producers (timber, forage, etc.), or to consumers (recreation).

Methodology: Input-Output Analysis in Brief

Input-output (interindustry) analysis provides substantive and unambiguous estimates of economic impacts. Regionally developed input-output information is available for the State of Washington and for selected portions of the Colorado River Basin. This information provides the Commission study inputs that would be very expensive if original work were necessary.

Because industrial activity is so highly interdependent, a change in the output decision of a single industry will have wide-spread effects. These effects will be felt in seemingly completely unrelated industries. Input-output analysis provides a means for estimating what all these effects will be. This discussion of input-output analysis is necessarily brief. The interested reader is referred to standard sources for a fuller treatment of the technical aspects of input-output analysis.^{5/}

Input-output analysis involves relatively formidable mathematics and empirical questions at the technical level, running the gamut from the solution of simultaneous equations and complex computer programs to details such as what industries produce the goods and services sold to a local bakery.

^{5/} See, for example, William H. Miernyk, The Elements of Input-Output Analysis, Random House, 1965; Dorfman, Samuelson and Solow, Linear Programming and Economic Analysis, McGraw-Hill, 1958; Chiou-shuang Yan, Introduction to Input-Output Economics, Holt, Rinehart and Winston, 1969.

On the other hand, the general concepts are not too complex. The basic 1963 Washington State I-O tables provide a useful point of departure for a simplified, general description of this methodology.

The Gross Flows Table

All input-output analyses must begin with a basic gross flows table similar to table I-2.^{6/} The outputs of 27 Washington industries are shown for the year 1963. Reading across the rows indicates that industry output is sold either to other processing industries or to what is normally called "final demands." This dichotomy between "interindustry" and "final demand" sales provides a useful analytical distinction. The nature of interindustry sales is that they will increase or decrease as the outputs of the various industries increase or decrease. Final demands, however, are considered as fixed, at least in the short run.

For example, reading across the first row we note the Field and Seed Crops industry sold \$9.1 million to other firms in the same industry, \$6.9 million to the Livestock and Livestock Products industry, \$46.5 million to Grain Mills and Other Food Products and \$1.7 million to Canning, Preserving and Beverages. Total sales to all Washington processing industries totaled \$64.2 million. In addition, the Field and Seed Crops industry sold \$2.5 million to Washington consumers. Sales of \$37.4 million and \$142.5 million, respectively, were made to other regions and foreign trade. Food and Field Crops' total gross output \$246.6 million in 1963, is shown at the far right.

The two import rows indicate what sellers outside Washington State sold to in-state buyers. The Value Created (sometimes referred to as Value Added) row represents the "sale" of productive resources to the various buyers. Indeed, the Value Created row is of special interest, because its sum, shown in the last column as \$9,066.0 million, is equal to Washington State Gross Product. This is the regional

^{6/} Table I-2, I-3, and I-4 are reproductions from The Washington Economy: An Input-Output Study, the Graduate School of Business Administration, University of Washington and Department of Commerce and Economic Development, State of Washington, 1967.

PHASES DOWN

TABLE 1-2
WASHINGTON
INTERINDUSTRY
GROSS FLOWS
TABLE, 1963

equivalent of the United States Gross National Product, a widely used national and international economic statistic. The Value Created entry for each industry shows its contribution to Washington Gross Product.

Some Conventions

For the most part, industry outputs in 1963 can be thought of as sales of various industries. A few exceptions should be noted.

a. Margin Sectors

Sales of retail and wholesale firms show only the "margin" or "markup" values. Reading across the fifth row (Meat and Dairy products) to the personal consumption expenditures column, the entry \$259.2 million shows how much Washington consumers spent on meat and dairy products not including grocers' handling costs. In this same row, under Column 25 (Wholesale and Retail Trade) there is no entry. This may seem unusual because the Meat and Dairy products industry surely sold a large volume of its output to wholesale and retail outlets. Although apparently misleading, this is a standard input-output convention; products which pass only through wholesale and retail outlets on their way to final markets are considered as direct sales to final markets. Thus the meat sale is shown as if it actually went directly to the consumer. If this procedure were not used, almost all industry output would show as sales to Wholesale and Retail Trade and the usefulness of input-output analysis would be greatly reduced.

The I-O convention noted above does not ignore either the wholesaler or the retailer. The \$259.2 million paid by Washington consumers for meat and dairy products, as listed, represents only the amount producers received. Consumers actually paid more than this amount. The additional amount paid is the markup for wholesalers and retailers. The \$1,451 million entry in Row 25 (Wholesale and Retail Trade) under the Washington personal consumption expenditures column includes the markup, or margin, on meat and dairy products.

There is no equivalent to product sales in other industries such as banking and insurance. Hence, they are also

shown as margin entries. Aside from the special cases noted, however, output and sales will be approximately equal.

b. Capital Goods

One further point should be noted. When reading across the rows to see where outputs are sold, only current inputs appear in the industry-to-industry flows. Consider Row 18 (Machinery). Part of the output, \$10.9 million, as shown in Row 18, Column 19, is sold to the Aerospace industry. One of the items sold might be a small electronic motor which is installed as a component in an aircraft. In this case, the output of the Machinery industry is used as current input by the Aerospace industry.

Suppose another firm in Washington's Machinery industry sold a large electric motor to the Aerospace industry to be used as part of a plant's heating equipment. The latter sale would not be considered an input for current production hence is not included in the \$10.9 million shown in Row 18, Column 19. Instead it is entered as investment, part of the \$30.0 million entry of Row 18 in the Washington Private Capital Formation column. In other words, only current inputs appear in the industry-to-industry portions of the table.

Analysis of Purchases: The Input Side

The above discussion indicates how rows are to be interpreted in order to determine the destination of outputs. As its name implies, input-output analysis also indicates sources of inputs used in production.

Since one industry's purchase is another industry's sale, the source of many inputs is already known. In our example above, Machinery industry's sales of \$10.9 million to the Aerospace industry is merely another way of saying that Aerospace bought \$10.9 million worth of inputs from Machinery. By reading down any of the first 27 columns, the amount of inputs purchased from the industry named at the left of the table can be determined.

Reading down the first column (Food and Field Crops), for example, \$9.3 million of inputs were purchased by Food and Field Crops from Washington's Petroleum and Chemical

industry (Row 13). The subtotal after Row 27 shows total inputs purchased by Food and Field Crops from producers in Washington. As indicated, Food and Field Crops purchased \$46.6 million of inputs within the state.

Inputs used but not purchased in Washington came from other states or from foreign nations. These amounts are shown for each industry in the next two rows as imports.

Finally, a row appears called "Value Created." (Some I-O tables list this row as "Value Added.") Value Created indicates the difference between a firm's output sales and purchases from other firms. It includes wages and salaries, rents, interest, depreciation, taxes, and profit (or loss). Profit (or loss) is merely the difference between output sales and all input and non-input expenses. Total gross outlay of each industry thus equals total gross output. In other words, inputs equal outputs.

The expenditure patterns of buyers other than the processing industries are shown in the Final Demand columns. For instance, reading down the Washington State and Local Government Expenditures column, one finds that \$361.9 million worth of supplies was purchased from Washington industries, that \$246.8 million was imported and that state and local government contributed \$590.3 million to Gross State Product. Similarly, the purchases by Washington consumers, Washington investors, the Federal government, domestics outside of Washington, and foreign buyers are shown respectively.

In summary, the information in table I-2 permits each industry to be examined from two viewpoints: marketing and purchasing. Marketing information is provided by reading across the rows to determine sales amounts. Reading down a column indicates the source of current purchases of inputs: once a Gross Flows table of the kind described has been developed, a number of other tables associated with input-output analysis can be developed. A discussion of two commonly used tables, the Direct Input Coefficient table and the Direct and Indirect Requirements table follows.

The Direct Input Coefficient Table

All of the input purchases of a particular industry indicated by a column in the Gross Flows table can be reduced to fractional dollars worth of input per one dollar of output. For example, under Column 1 at Row 13, the \$9.3 million entry shows inputs purchased by Food and Field Crops from Petroleum and Chemicals. Food and Field Crops, as shown, produced an output of \$246.6 million. The ratio of Petroleum and Chemical inputs to total output is 9.3:246.6. This ratio can be reduced to 3.8 cents worth of Petroleum and Chemical input per dollar's worth of agricultural output.

The latter ratio also expresses the percentage of total inputs purchased from each supplying industry. This means that 3.8 percent of Food and Field Crops inputs are purchased from the Washington Petroleum and Chemical industry. If this calculation is made for each input for every industry, a table of direct input coefficients such as table I-3 is obtained.

The Direct and Indirect Requirements Table

The next standard table of input-output analysis traces both the direct and indirect impact of each industry on all other industries. Referring back to Food and Field Crops, to produce a dollar's worth of Food and Field Crops took, among other inputs, 3.8 cents of Petroleum and Chemicals. The Petroleum and Chemicals industry in turn needs inputs to produce the additional output, even if the increase is only 3.8 cents' worth. If Food and Field Crops were to expand, in order to produce additional inputs for Food and Field Crops, still more Petroleum and Chemical inputs would be needed. The production of these will, in turn, require still other inputs.

In order to trace the full impact on all industries of a dollar's change in agricultural output, impacts on suppliers, suppliers of suppliers, suppliers of suppliers of suppliers and so on must be made. Modern computers permit tracing all these effects. The results of these computations permit the construction of a table showing the direct and indirect effects of different levels of output of a given industry on all other industries. Table I-4 provides an example of a direct and indirect requirements table.

PURCHASING INDUSTRIES

TABLE 1-3
WASHINGTON
DIRECT INPUT
COEFFICIENTS TABLE
1963
(In Cents, Producers' Prices)

TABLE 1-3 WASHINGTON DIRECT INPUT COEFFICIENTS TABLE 1963 (In Cents, Producers' Prices)		RESOURCE				MANUFACTURING																	NON-COMMODITY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		FIELD AND SEED CROPS				LIVESTOCK AND PRODUCTS				VEGETABLES, FRUITS AND OTHER AGRI.				FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14				MEAT AND DAIRY PRODUCTS SIC 201 AND 202				CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208				GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209				TEXTILES AND APPAREL SIC 22-23				LUMBER AND WOOD PRODUCTS (EXC. PLYWOOD, SIC 2431, SIC 24 AND 25)				PLYWOOD MILLS SIC 2432				PAPER AND ALLIED PRODUCTS SIC 26				PRINTING AND PUBLISHING SIC 27				CHEMICAL AND PETROLEUM ¹ PRODUCTS, SIC 28-29				STONE, CLAY AND GLASS PRODUCTS SIC 32				IRON AND STEEL SIC 331-332, 3391 AND 3399				NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392				FABRICATED METAL PRODUCTS SIC 34				MACHINERY SIC 35-36				AEROSPACE SIC 37				OTHER TRANSPORTATION ² EQUIPMENT, SIC 37 (EXC. 372)				OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39				CONSTRUCTION SIC 15-17 AND 656				TRANSPORTATION SERVICES SIC 40-47				COMMUNICATION AND UTILITIES ³ SIC 48-49				TRADES SIC 50-59				FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)				SERVICES SIC 70-89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
RESOURCE	FIELD AND SEED CROPS	1	3.69	2.93				.41	15.56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

For Footnotes, See Table I-2

FINAL DEMAND CHANGE OF \$100 THOUSAND FOR OUTPUT OF INDUSTRY:

PURCHASING INDUSTRIES

		TABLE 1-4 WASHINGTON TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS TABLE, 1963																												
		RESOURCE										MANUFACTURING										NON-COMMODITY								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
SELLING INDUSTRIES	RESOURCE	FIELD AND SEED CROPS	1	104317	6224	635	655	3508	1329	18048	361	610	506	531	551	412	593	589	326	418	479	396	474	502	483	628	611	692	682	667
		LIVESTOCK AND PRODUCTS	2	2377	109743	3113	3118	53361	2913	3647	1768	2973	2475	2600	2692	2062	2890	2883	1597	2049	2349	1944	2321	2455	2358	3092	2993	3336	3339	3070
		VEGETABLES, FRUITS AND OTHER AGRI.	3	516	570	101360	681	540	14435	992	1111	645	536	563	582	450	627	623	345	442	507	420	501	536	638	690	649	721	723	674
		FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14	4	347	345	541	102364	375	5723	612	186	15778	5299	2023	430	391	18687	1228	456	315	282	205	344	1143	3948	631	374	388	397	373
		MEAT AND DAIRY PRODUCTS SIC 201 AND 202	5	3860	3677	5055	5107	113012	4780	4900	2870	4836	4023	4223	4371	3380	4703	4680	2593	3327	3813	3153	3767	3987	3830	5051	4858	5414	5420	4972
		CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	6	1329	1756	1739	1874	1542	104298	2008	988	1696	1397	1459	1507	1120	1649	1612	894	1146	1312	1085	1297	1377	1327	1929	1673	1866	1867	1781
		GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209	7	2309	17628	3017	3144	11427	4675	110751	1715	2903	2407	2522	2619	1949	2823	2800	1548	1987	2277	1883	2251	2383	2297	2980	2901	3304	3242	3233
		TEXTILES AND APPAREL SIC 22-23	8	279	333	426	790	311	370	990	105279	450	317	365	319	235	417	340	213	239	274	336	307	1051	396	397	350	390	390	363
		LUMBER AND WOOD PRODUCTS, EXC. PLYWOOD, SIC 24321, SIC 24 AND 25	9	498	516	1902	669	691	1355	948	337	128454	23766	13288	1519	396	1133	681	371	373	439	324	712	7466	8074	1310	597	752	641	586
		PLYWOOD MILLS SIC 2432	10	47	43	83	47	49	72	59	30	701	105418	627	93	34	68	48	25	33	37	58	246	1473	600	63	56	61	61	65
		PAPER AND ALLIED PRODUCTS SIC 26	11	768	1273	5741	1043	2555	5698	4578	1210	1051	896	110729	10264	939	5319	1051	534	1167	1008	674	883	2239	1135	1110	1092	2105	1312	1139
		PRINTING AND PUBLISHING SIC 27	12	1384	1342	1790	1680	1402	2081	2346	987	1872	1588	1558	103799	1176	2136	1757	935	1178	1364	1261	1362	1423	1557	1854	1936	4319	4383	2944
		CHEMICAL AND PETROLEUM ¹ PRODUCTS, SIC 28-29	13	6226	3582	6421	3981	3301	3880	3541	1778	3997	6447	5560	4445	104070	7286	3153	1886	3088	2194	1884	2581	3583	4064	7576	3491	3923	3543	3378
		STONE, CLAY AND GLASS PRODUCTS SIC 30	14	699	502	630	1247	678	2627	778	259	708	559	737	439	365	115289	3204	384	678	505	320	644	378	8609	678	611	556	619	556
NON-COMMODITY	IRON AND STEEL SIC 331-332, 3391 AND 3399	15	108	94	111	110	121	650	90	59	139	92	150	99	127	716	101908	202	8641	1982	93	3148	321	1783	260	147	109	118	132	
	NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	16	664	72	352	49	56	128	142	25	84	56	69	44	365	162	354	104082	612	1072	237	699	1541	363	64	83	48	48	47	
	FABRICATED METAL PRODUCTS SIC 34	17	396	372	449	507	723	6866	418	365	626	379	503	540	584	1138	555	234	102792	848	325	1458	323	4529	658	622	499	489	741	
	MACHINERY SIC 35-36	18	151	128	195	656	140	401	184	94	591	564	476	177	349	1352	344	145	605	102663	1036	968	289	719	269	309	217	187	235	
	AEROSPACE SIC 37	19	6	6	7	6	9	11	9	3	17	12	10	6	24	15	8	4	5	4	01258	5	8	8	160	6	7	7	6	
	OTHER TRANSPORTATION ² EQUIPMENT, SIC 37 (EXC. 372)	20	369	280	262	438	218	214	192	115	264	187	183	178	169	420	200	107	136	153	126	100412	168	183	410	196	265	218	197	
	OTHER MANUFACTURING ³ SIC 19, 20, 31, 38 AND 39	21	166	135	214	261	146	193	155	117	208	172	243	272	242	211	194	106	137	206	309	421	103414	382	230	219	260	243	235	
	CONSTRUCTION SIC 15-17 AND 656	22	3764	3239	3580	2160	2868	2744	2391	1389	2360	2000	2208	2319	1653	2248	2743	1267	1531	1795	1497	1768	1813	101894	4555	4230	3277	4244	3753	
	TRANSPORTATION SERVICES SIC 40-47	23	2890	3199	3644	3623	5684	6631	5324	1819	10568	6927	5724	3521	3685	9070	4601	2700	2664	2508	1920	2711	4791	4783	103483	3513	4366	4004	3536	
	COMMUNICATION AND UTILITIES ⁴ SIC 48-49	24	8190	6399	9977	7950	7464	9553	7846	4917	8771	7741	10276	8612	7436	9947	10871	9632	6960	6814	5514	6348	7850	6950	9230	116317	12829	11224	11219	
	TRADES SIC 50-59	25	22766	19855	28329	27703	22780	28171	22653	16057	30663	25167	25803	24903	18045	28451	31670	14684	19621	22150	17194	21509	23909	25549	28328	26817	130733	30410	29785	
	FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	26	8239	6922	10363	10197	7513	9905	8063	6210	9803	8365	9064	9178	6385	10524	9963	5587	7370	7700	5733	7549	8397	8245	9915	9548	12751	116469	12480	
	SERVICES SIC 70-89	27	14235	10182	15708	14832	12220	15012	13176	9158	15512	13345	12972	17138	10151	14824	14790	8098	10593	11622	9203	12160	13062	13890	17005	15232	17952	18706	119581	
VALUE CREATED			121359	98827	159114	154635	107181	140756	113866	90447	151083	126091	132715	137501	02147	146625	147348	81624	104752	120150	99452	118666	125433	120225	154931	153056	170493	170708	152896	

For footnotes, See Table 1-2

Each entry represents the output required directly, indirectly, from the Washington industry named at the beginning of the row for each 100 thousand dollars of delivery to final demand by the industry named at the head of the column.

"Backward-Linked" Economic Impacts

The impact of increased sales in the final demand sector can take two forms: (1) directly and indirectly "linked" industry impacts, and (2) "induced" impacts generated by changes in consumer, investment, and state and local government spending.

"Linked" industries' impacts can be traced out in a table such as table I-4. This type of impact is described above.

"Induced" impacts arise because consumers, investors, and state and local governments will spend some of the added income generated in industries tied directly and indirectly to the export and other final demand markets. Consumers will increase expenditures on various goods and services, business firms will invest more as their levels of output rise, and state and local governments, and locally-oriented Federal activities, will expand their services to satisfy increased demands. It is necessary to account for all these income induced changes if meaningful estimates of the impacts of changes in public policy are to be made.

The most important of the three induced impacts arises because of changes in consumer spending. These changes involve retailers, barber shops, local dairies, etc. Changes of these kinds obviously effect suppliers of all these outlets.

The direct and indirect coefficients tables contained in Appendix C were employed and constructed to account for both "linked" and "induced" spending. Consequently, the tables employed in analyzing policy alternatives included in Chapter III show total impacts of policy changes. The initial impact of the policy change, i.e., the initial economic change that triggers a subsequent chain reaction of economic impacts is indicated in the verbal description of each policy alternative.

Output and Income Multipliers

While the emphasis of the present study is on describing the structure of the regional economies for the base

year (1963) and 1980, and on the analysis of selected representative changes in public policy, it is useful to develop the concept of the "multiplier." The multiplier is a more generalized tool and provides a ready means of analysis in situations where lengthy and usually costly studies are not appropriate.

It was shown in the previous sections that a change in an industry's sales to final markets will have widespread effects on industries throughout the economy. As a result, the total change in output will be greater than the initial change in final sales. The ratio of the total change in output to the initial change in output is called the output multiplier.

Output multipliers are easily calculated from the direct and indirect requirements table. As noted earlier, a column of coefficients in that table indicates what each and every industry will have to produce if the industry to which that column corresponds wishes to deliver one dollar's output to final markets. The sum of those coefficients indicates the total industrial output required for that industry to supply that one dollar to final markets. For example, if the Field and Seed Crops industry wished to increase its exports to foreign purchasers by one dollar, it would have to produce an additional 4.3 cents of its own output (table I-4). A glance down Column 1 also reveals that Livestock and Products output would have to increase by 2.4 cents, that Vegetable, Fruits and Other Agricultural output would have to increase by 0.5 cents and so on down the column. Altogether, total output in Washington State would have to increase by a total of \$1.87, or \$.87 over the one dollar increase in final sales. The output multiplier is 1.87.

The output multiplier is not the only relevant piece of information to be gleaned from input-output analysis. As output changes, value added (income) must change as well. As a result, the estimation of income multipliers is highly desirable. The income multiplier is to be interpreted as the ratio of the total change in value added to the initial change in value added.

"Forward-Linked" Economic Impacts

The discussion so far has only revealed the impact on output which results from changes in demand. If a complete analysis of impacts of changes in public policy is to be made, "forward-linkage" or "supply" impacts must be included. A forward-linkage impact occurs whenever the supply of a raw material, or intermediate good, in the production process is a critical constraint. For example, if the supply of labor in a region increases, this would in certain circumstances have the effect of encouraging producers to increase their outputs. Labor would be cheaper. Conversely, if the supply of labor were reduced in a region, producers might be forced to contract their outputs; not because the demand for their outputs is lower, but because sufficient labor inputs are not available to continue outputs at previous levels.

To evaluate supply impacts of outputs deriving from public lands, a table of sales coefficients is required.^{7/} Sales coefficients for Washington show, for example, that 94 percent of the Forestry industry's output, and 80 percent of the Logging industry's output, are sold to domestic producers. A table of import coefficients^{8/} shows that Washington State forest products industries import no timber. These two observations indicate Washington's Timber industry is highly dependent upon domestic markets for their logs. Domestic producers, on the other hand, are highly dependent upon the Washington Timber industry for its timber supply.

It is highly possible in a situation of this kind that a reduction in the output of the timber industry will require a concomitant adjustment in the output of the forest products processing industries unless processors can develop alternative sources of supply.

If domestic processors can adjust to an increase or decrease of domestic supply of an input by rather inexpensively decreasing or increasing imports (of that particular

^{7/} See Appendix C. A sales coefficients table for the 1980 Washington economy is included and exhibited as table C-29.

^{8/} An import coefficients table is similar to the table of direct input coefficients except that it indicates what domestic producers purchase from industries outside the region. Such a table was developed for the 1963 Washington input-output study. However, these coefficients are not presently available for publication.

input), respectively, the supplier of the raw material in question will have very little leverage upon the processing industry. Moreover, if the processor can adjust to a supply change by substituting alternative inputs, say concrete for wood, the supplier of the raw material will have little or no leverage on the processing industry. Since timber transport costs are relatively high, it is unlikely that Washington processors can economically import timber to offset a reduction in local timber output. Rather, a downward adjustment in the size of the industry in the region is likely to occur.

Estimating the Adjustment Burden of a Change in Public Policy

The Public Land Law Review Commission has specified representative policy alternatives to be evaluated for each study region.^{9/} Estimates of the adjustment burden in each region for each policy alternative are made in terms of expected changes in the 1980 levels of output, value added, and employment.

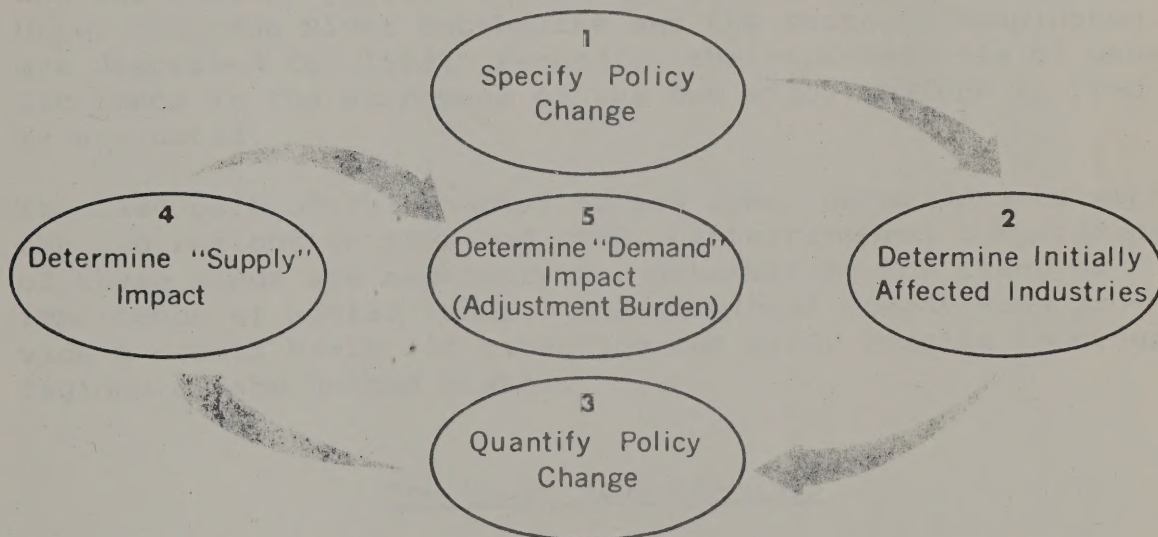
To evaluate a change in public policy the following steps are necessary (figure I-2):

- I. A policy change is specified. It is presumed here there is some reason for the policy change, and the proposed change is feasible. A proposed policy change might arise as follows: "More recreation area is desired and the public is willing to sacrifice some timber production to obtain it."
- II. The share of output of all relevant industries directly attributable to public lands must next be determined.
- III. The information from Step II is then translated into supply changes. The example noted in Step I might take the form of a ten percent increase in public recreation facilities and a five percent decrease in public timber cut.

^{9/} See Appendix E.

- IV. Next, changes in the outputs of the immediately affected industries are estimated. In our example, sales to tourists will rise and the production of forest products will fall. This is the "forward-linked" or "supply" impact.
- V. The final step is to estimate all direct and indirect effects of immediate output and final sales changes determined in Step IV. These are the "backward-linked" or "demand" effects. Input-output analysis as described above is employed to develop these estimates.

FIGURE I-2
ESTIMATING THE ADJUSTMENT BURDEN
OF A CHANGE IN PUBLIC POLICY



The remainder of the report is devoted to analyzing the role which public lands play in two regional economies and in the United States. In Chapter II, the economies of the two study regions are presented and discussed in considerable detail. The role of public lands, and how that role is changing, is also discussed in Chapter II. To learn of the potential economic impacts which marginal changes in public policy might have on those two economies, a number of hypothetical but representative alternative uses of public resources are analyzed and discussed in detail. Chapter IV is devoted to discussing the overall economic role of public lands in the United States and to a brief evaluation of the study results.

CHAPTER II

THE ECONOMIES OF THE STUDY REGIONS: 1963 AND 1980

The Role of Public Lands

To analyze the economic role and impact of public land policy it is necessary to have an understanding of the structure of the economy of the region where the policy is implemented. The purpose of this chapter is to describe the economies of the two study regions and the role of public lands in these economies. First, the overall economies, and the role of public lands in those economies, of the three Upper Colorado River Sub-basins and the State of Washington are described for 1963. Secondly, the expected role of public lands in the economies of the two study regions in 1980 is evaluated.

The last part of the chapter offers some comparisons between the two regions in 1963 and 1980. Intertemporal comparisons of these kinds are necessary for determining the changing importance of public lands. Interregional comparisons provide a useful basis for extending the study results to other regions of the United States.

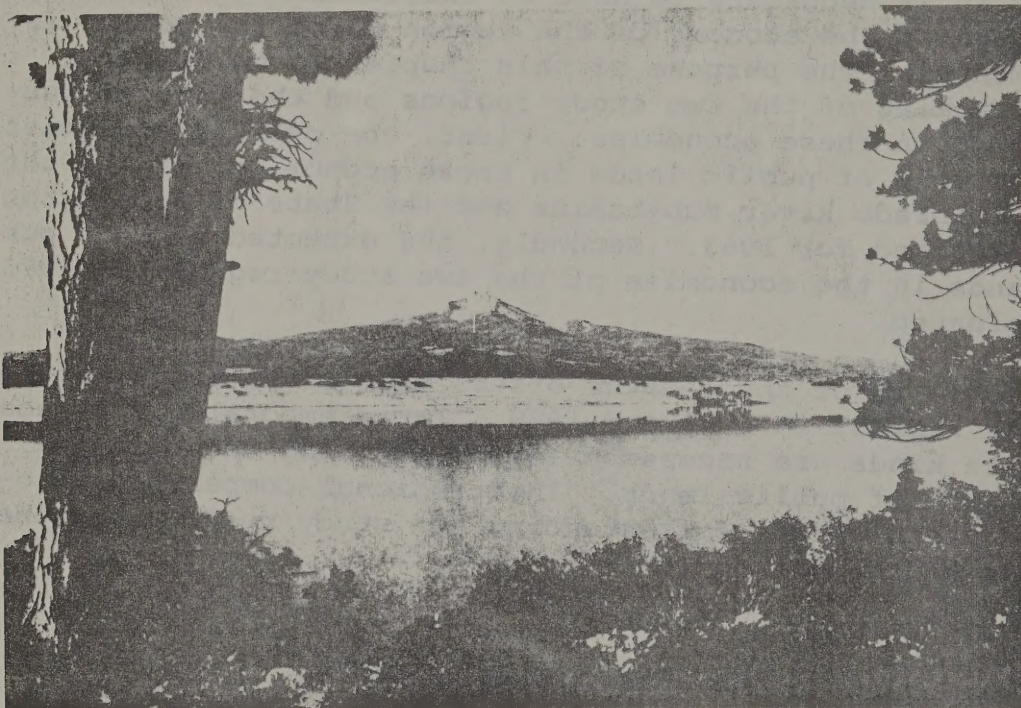
The Study Regions--1963

The Upper Colorado River Basin

The Upper Colorado River Basin comprises three of the Colorado River Basin's six major sub-basins. These three are: the Upper Main Stem, the San Juan, and the Green (figure II-1). All three of these sub-basins are primarily rural, and are highly dependent upon resource extraction and related processing industries. The region includes portions of Colorado and Utah and smaller portions of Wyoming, Arizona, and New Mexico. It is bounded by the Continental Divide on the east and stretches as far west as central Utah. In general, transportation facilities are consistent with a rural region. Only small portions of national interstate highways intersect the region.

The Upper Main Stem Sub-Basin

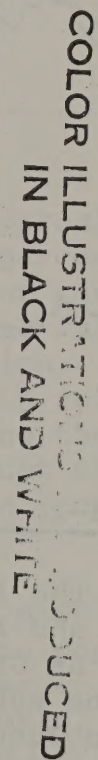
Geography and Population. The Upper Main Stem, which consists of 16.7 million acres, is the smallest of the three sub-basins. Almost 85 percent of the Upper Main Stem is in Colorado. The remaining 15 percent is in Utah.^{1/} For purposes of the present analysis, the Upper Main Stem Sub-basin is defined to include 13 counties in Colorado and one in Utah. Colorado counties include: Delta, Dolores, Eagle, Garfield, Grand, Gunnison, Hinsdale, Mesa, Montrose, Ouray, Pitken, San Miguel, and Summit. Grand County, Utah, completes the list of "representative" counties included in the Upper Main Stem.^{2/}



^{1/} See U. S. Department of Health, Education, and Welfare; Public Health Service; Bureau of State Services; Division of Water Supply and Pollution Control; Region VIII; Colorado River Basin Water Quality Control Project; State and County Area Tabulations for the Colorado River Basin: (Denver: Colorado River Basin Water Quality Control Project; January, 1962); p. 7.

^{2/} The Public Health Service has designated certain counties of the Colorado Basin as being "representative." Most economic activity occurs in these counties. It was necessary to use these county units here because the boundaries of the Colorado River Basin, and its sub-basins, follow natural drainages. Rarely do these boundaries conform to county boundaries. Moreover, most statistical data are available for entire counties. Ibid., p. 12.

LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT IN THE UPPER COLORADO RIVER BASIN





The location of the Upper Main Stem is shown in figures II-1 and II-2. Most of west-central Colorado is included as well as Grand County in east-central Utah. The largest city in the sub-basin, which had a 1960 population of 18,700, is Grand Junction, Mesa County, Colorado. Other communities in the sub-basin include the resort town of Aspen, and the towns of Glenwood Springs, Hot Sulphur Springs, Fraser, Dillon, Redcliff, Eagle, Rifle, Delta, and Montrose, Colorado. The town of Moab is located in Grand County, Utah. The 1960 population estimates for these communities are shown in table II-1.

TABLE II-1

CITY AND TOWN POPULATION
OF THE UPPER MAIN STEM SUB-BASIN
1960 CENSUS

Grand Junction, Colo.	18,694
Montrose, Colo.	5,044
Moab, Utah	4,682
Delta, Colo.	3,832
Glenwood Springs, Colo.	3,637
Rifle, Colo.	2,135
Aspen, Colo.	1,101
Dillon, Colo.	814
Red Cliff, Colo.	586
Eagle, Colo.	546

Source: U. S. Bureau of Census, "U. S. Census of Population: 1960, Vol. 1, Characteristics of the Population."

The Upper Main Stem had a total population of approximately 128,000 in 1960. By census definition, 65.4 percent of the population was classified rural;^{3/} 15.6 percent rural farm, and 49.8 percent rural non-farm. In 1950, rural farm population was more than 30 percent of total population. Rural farm population has thus declined by one-half in relative importance. The rural non-farm population during the same period increased in relative importance. No doubt this reflects an exodus of the population in the sub-basin from farms into small town environments.

Compared to the other two sub-basins, the Upper Main Stem is the least urbanized. Only 34.6 percent of the population is considered urban. On the other hand, it has a population density of about five persons per square mile, which makes this sub-basin the most densely populated of the three.

^{3/} The rural population is defined as that portion of the population living in cities and towns of less than 2,500 inhabitants.

Economy. The economy of the Upper Main Stem Sub-basin is characterized by a heavy dependence on agriculture, mineral extraction, and recreational services. The sub-basin has long been a center of mining activity. In 1963 uranium mining generated \$91.9 million (table II-2). Of that \$91.9 million, \$75.1 million was exported from the sub-basin.^{4/} The second most important mining activity is zinc extraction. In 1963 \$12.2 million of zinc was produced. Exports of zinc totaled \$11.7 million. Oil and gas production is not presently important in Garfield County, however, this area figures prominently in current speculation regarding the development of an oil shale industry in Colorado. Pilot plants have been constructed in the Rifle area.

Range Livestock is the most important agricultural industry in the Upper Main Stem Sub-basin, generating a total output in 1963 of \$28.5 million and value added of \$18.6 million. More than \$17.5 million of this output was exported. In the next section the importance of grazing on federally owned land to the agricultural industry is indicated.

Despite recent increases in the average size of farms, and decreases in their number, most of the agricultural establishments in the Upper Main Stem are small. Only 25 percent of the farms in the area have sales over \$10,000 per year and are considered as commercial farms.^{5/}

Irrigation is important to the agricultural output of the sub-basin. Some of the earliest projects of the U. S. Bureau of Reclamation are located in the area.

The only manufacturing industry in the Upper Main Stem of any significance is Food production and Kindred Products. Total output in 1963 was \$20.9 million. Slightly more than one-fourth of total output of the latter industry was exported. The industry employed 803 and generated value added of \$7.7 million.

^{4/} See Appendix C, table C-2. Exports are defined as sales to all purchasers residing outside the region--in this case the Upper Main Stem.

^{5/} See Jay Andersen, "Agricultural and Forestry Aspects of an Inter-industry Analysis of the Upper Main Stem Sub-basin of the Colorado River," Bernard Udis (editor), An Analysis of the Economy of the UMS Sub-basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries (Boulder: Bureau of Economic Research, University of Colorado, August, 1967), pp. 72-126.

UPPER MAIN STEM SUB-BASIN OUTPUT, EMPLOYMENT AND VALUE ADDED FOR 1963
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1963 Output	Percent Total 1963 Output	1963 Employment	Percent Total 1963 Employment	1963 Value Added	Percent Total 1963 Value Added
Range Livestock	\$ 28.5	5.0%	5,439	11.0%	\$ 18.6	4.1%
Feeder Livestock	5.3	.9	18	*	.2	.1
Dairy	3.1	.5	202	.4	1.7	.4
Food Field Crops	5.9	1.0	370	.7	3.7	.8
Truck Crops	.9	.2	183	.4	.3	.1
Fruit	6.6	1.1	69	.1	2.7	.6
Forestry	2.1	.4	967	2.0	1.8	.4
All Other Agriculture	2.6	.5	350	.7	.9	.2
Coal	5.9	1.0	663	1.3	3.8	.8
Oil and Gas	1.8	.3	659	1.3	.4	.1
Uranium	91.9	16.0	1,985	4.0	32.1	7.1
Zinc	12.2	2.1	1,295	2.6	5.9	1.3
All Other Mining	7.0	1.2	720	1.5	5.1	1.1
Food and Kindred	20.9	3.6	803	1.6	7.7	1.7
Lumber and Wood	5.2	.9	512	1.0	1.8	.4
Printing and Publishing	3.5	.6	521	1.1	1.8	.4
Fabricate Metals	1.8	.3	96	.2	.6	.1
Stone, Clay and Glass	1.6	.3	62	.1	.6	.1
All Other Manufacturing	18.0	3.1	794	1.6	5.3	1.2
Wholesale Trade	22.7	3.9	1,594	3.2	10.0	2.2
Service Stations	5.0	.9	880	1.8	3.6	.8
All Other Retail	47.5	8.3	5,878	11.9	27.3	6.0
Eating and Drinking	14.7	2.6	1,668	3.4	5.2	1.2
Agriculture Services	5.0	.9	419	.8	2.6	.6
Lodging	8.7	1.5	2,197	4.4	4.6	1.0
All Other Services	21.4	3.7	1,998	4.0	8.7	1.9
Transportation	52.7	9.2	2,136	4.3	27.4	6.1
Electric Energy	10.2	1.8	541	1.1	5.4	1.2
Other Utilities	20.4	3.5	1,108	2.2	10.1	2.2
Contract Construction	99.9	17.4	3,674	7.4	25.0	5.5
Rentals and Finance	41.7	7.3	1,569	3.2	35.0	7.7
Households	----	----	7,691	15.7	88.2	19.5
Local Government	----	----	1,145	2.3	22.8	5.0
State and Federal Gov't.	----	----	1,361	2.7	65.5	14.5
Final Payments	----	----	-----	---	15.5	3.4
Total	\$574.7	100.0%	49,567	100.0%	\$451.9	100.0%

*Negligible

The Lumber and Wood industry, the second largest manufacturing industry in the sub-basin, had a 1963 total output of \$5.2 million. More than \$4.5 million of this output was exported. Although the total output of Lumber is less than one-fourth of the Food and Kindred Products industry, Lumber industries employed 512 persons compared to 803 in Food and Kindred Products. Table II-2 also indicates the Printing and Publishing industry, with output of \$3.5 million, employed 521 persons and added \$1.8 million to gross regional products. Sales to outdoor recreationists amounted to an estimated \$30.1 million in 1963.^{6/} Such sales make the skiing and big game hunting in the sub-basin an extremely valuable resource.

Average yearly per capita income in 1963 in the Upper Main Stem was about \$1,695. This is approximately 87 percent of the 1960 U. S. national average.

Public Lands in the Upper Main Stem Sub-Basin. Public lands in the Upper Main Stem comprise 11,777 thousand acres or 70.5 percent of the sub-basin's total land area (tables II-3, II-4), most of which is managed by the U. S. Forest Service and by the Bureau of Land Management.

TABLE II-4

PUBLIC LAND OWNERSHIP IN THE UPPER MAIN STEM SUB-BASIN,
BY AGENCY, 1966
(Thousands of Acres)

Bureau of Land Management	5,126.1
U. S. Forest Service	6,023.4
Bureau of Reclamation	399.2
National Park Service	153.8
All Other Agencies	74.8
Total Public Lands	11,777.3
Total Regional Acreage	16,702.1
Percent Public Lands of Total Regional Acreage	70.5%

^{6/} These are total recreation expenditures, including the purchase of goods not produced in the sub-basin but purchased in the sub-basin. When only the margin expenditures are considered, the estimates of recreation expenditures are lowered significantly.

PUBLIC LAND OWNERSHIP IN THE UPPER THREE COLORADO SUB-BASINS AND WASHINGTON STATE BY AGENCY, 1966
(Thousands of Acres)

Sub-Basin or State	Bureau of Land Management	U.S. Forest Service	Bureau of Reclamation	National Park Service	All Other Agencies	Total Public Lands	Total Regional Acreage	Percent Public Lands of Total Acreage
Upper Main Stem Sub-Basin	5,126.1	6,023.4	399.2	153.8	74.8	11,777.3	16,702.1	70.5%
San Juan Sub-Basin	7,473.7	3,028.8	1,129.8	386.5	4.2	12,023.0	24,296.0	45.7
Green River Sub-Basin	11,841.0	3,337.8	689.9	185.0	68.2	16,121.9	29,440.0	54.8
Total Three Sub-Basins	24,440.8	12,390.0	2,218.9	725.3	147.2	39,922.2	70,438.1	56.7%
Washington State	274.7	9,690.7	131.7	1,082.7	216.9	11,396.7	44,160.0	25.8%

SOURCE: For Colorado - Compiled from "Inventory Report on Land Property Owned by the United States throughout the World, 1966", General Services Administration.

For Washington - Compiled from "Table I, Public Land Acreages by Agencies and States, 1966", p.1 and 2, by Public Land Law Review Commission - 10-31-68.

TABLE II-5

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LANDS
(Thousands of 1963 Dollars at Producers' Prices)
UPPER MAIN STEM - 1963

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 28,546	\$9,506	33.3 %									\$ 9,506	33.3 %
Forestry	2,144			\$2,015	94.0 %							2,015	94.0
Oil and Gas	1,781					\$1,656	93.0 %					1,656	93.0
Coal	5,945							\$3,389	57.0 %			3,389	57.0
Eating & Drinking	14,655									\$ 7,709	52.6 %	7,709	52.6
Lodging	8,654									3,825	44.2	3,825	44.2
Other Retail	47,518									713	1.5	713	1.5
Service Stations	4,997									1,949	39.0	1,949	39.0
Services	21,371									4,851	22.7	4,851	22.7
All Other Sectors	439,081												
Total	\$574,692	\$9,506	1.65%	\$2,015	.35%	\$1,656	.29%	\$3,389	.59%	\$19,047*	3.31%	\$35,613	6.20%

* 88.5% of Total Recreation Expenditures.



In turn, some industries in the Upper Main Stem are highly dependent upon supplies of inputs from public lands, or management leases on public lands. The sale of grazing rights on public land supported 33.3 percent of range live-stock production, \$9.5 million, in 1963 (table II-5). The value of timber cut from public lands, \$2 million, accounted for 94 percent of total Forestry output. Leasable mineral production on public lands was \$1.7 million in Oil and Gas, 93 percent of that industry's total output, and \$3.4 million (57 percent) of the Coal industry's total gross output.

Compared with the total dollar production of the resource sectors on public lands, total expenditures associated with recreation on public lands rank much higher, accounting for \$19 million in total sales in 1963. Most of this was associated with winter sports activities. Some very popular ski resorts, including Aspen, are located in the Upper Main Stem.

All skiing facilities in the Upper Main Stem are located on public lands. The \$19 million of total sales includes \$7.7 million spent on Eating and Drinking establishments, \$3.8 million on Lodging, \$1.9 million on Service Stations, and \$4.9 million on Other Services. These figures indicate that winter sports activities in 1963 accounted for more than one-half of the business of Eating and Drinking establishments, approximately 44 percent of Lodging services, 39 percent of the business of Service Stations, and almost 23 percent of Other Services.

Public lands were not as important in the economy of the Upper Main Stem as a whole as they were to industries directly dependent upon those lands for supplies or for recreation sites. The \$35.6 million of Upper Main Stem total gross output, which either took place on, or was directly attributable to public lands, represents only 6.2 percent of the sub-basin's \$575 million total gross output.

San Juan Sub-Basin

Geography and Population. The San Juan Sub-basin is roughly rectangular in shape and includes the so-called "Four Corners" area where Arizona, Colorado, New Mexico, and Utah meet. The San Juan Sub-basin is approximately 300 miles long, from east to west, and 120 miles wide from north to south. The physical characteristics of the sub-basin vary widely, ranging from rugged mountain areas to vast stretches of desert plateau. The Green River converges with the Colorado at the northern boundary of the San Juan Sub-basin. The Colorado runs southwesterly for 220 miles from the mouth of the Green River to Lee Ferry, the legal boundary between the Upper and Lower Basins of the Colorado.

The San Juan River is the largest tributary of the Colorado in the area, and drains that portion of the sub-basin southeast of the Colorado. It converges with the Colorado 80 miles upstream from Lee Ferry. Three small rivers, the Freemont, Escalante, and Paria join the Colorado from the west.

THE SAN JUAN SUB-BASIN

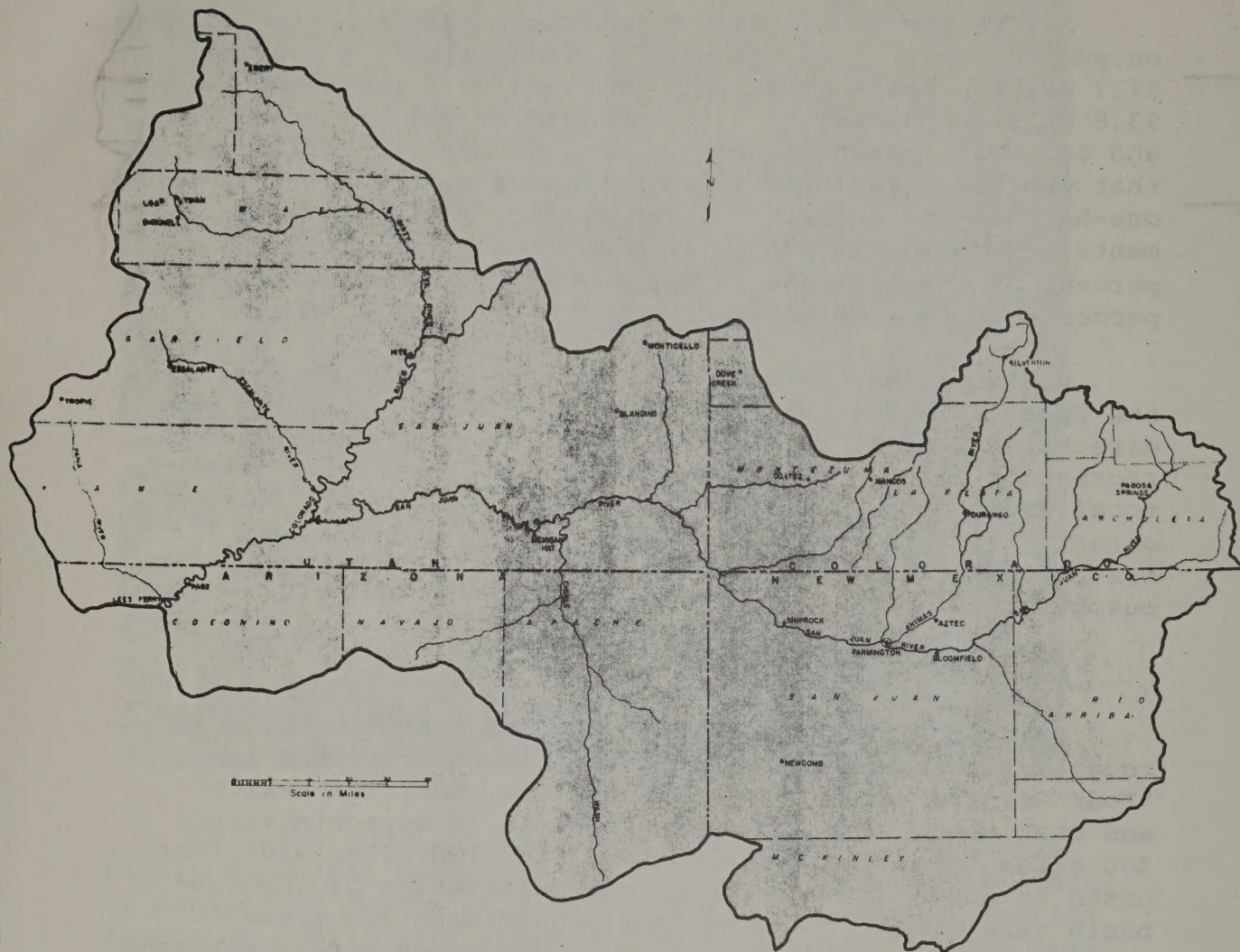


FIGURE II-3

The San Juan Sub-basin contains all, or portions, of 22 counties. Total area of the sub-basin is 24.3 million acres. For purposes of the present study, the San Juan Sub-basin is defined in terms of nine "representative" counties. These counties account for most economic activity in the sub-basin. Included are Archuleta, LaPlata, Montezuma, and San Juan in Colorado; San Juan County in New Mexico; and Garfield, Kane, San Juan and Wayne Counties in Utah. Figure II-3 shows the boundaries of the San Juan Sub-basin. In terms of representative counties, the San Juan comprises 19.7 million acres.

While there are no major metropolitan areas in the San Juan Sub-basin, small population centers exist in Colorado, New Mexico, and Utah. The largest of these are Farmington, New Mexico, which had a 1960 population of 23,800, and Durango, Colorado, with a 1960 population of 10,500. Other towns in the sub-basin are Cortez, Pagosa Springs, Dove Creek, Mancos, and Silverton in Colorado; Page in Arizona, and Shiprock in New Mexico. The 1960 population estimates for these towns are shown in table II-6.

TABLE II-6

CITY AND TOWN POPULATION
OF THE SAN JUAN SUB-BASIN
1960 CENSUS

Farmington, New Mexico	23,786
Durango, Colorado	10,530
Cortez, Colorado	6,764
Page, Arizona	2,960
Pagosa Springs, Colorado	1,374
Dove Creek, Colorado	986
Mancos, Colorado	832
Silverton, Colorado	822

Source: U. S. Bureau of Census, "U. S. Census of Population: 1960, Vol. 1, Characteristics of the Population."

The San Juan Sub-basin had a total population of approximately 107,000 in 1960. By census definition, 57.8 percent of those residents were classed as rural. Of this group, 11.8 percent were classed as rural farm and 46 percent as rural non-farm. Significant changes have taken place in the rural farm section of the population since 1950. In 1950, one-third of the population was classed as rural farm. This fell to 11.8 percent in 1960. The growth in the rural non-farm portion of the population was negligible, rising from 44.2 percent to 46.0 percent. The largest change took place in the urban component, which grew from 22.4 percent in 1950 to 42.2 percent in 1960.

With a population density of 3.5 persons per square mile, the San Juan is the second most densely populated of the three sub-basins.

Economy. The San Juan Sub-basin was originally populated by miners prospecting for gold and other precious metals. Mining, and oil and gas extraction, are still the most important economic activities in the area. Oil and gas production accounted for \$170.9 million of total output in 1963 (table II-7). Of that, \$162 million was exported. Uranium is the second largest mining industry. Total output in 1963 was \$52.6 million. More than \$40 million of that was exported. Mining's total contribution to gross regional product was \$86.4 million, or 25.2 percent of the total.

As in the Upper Main Stem, Range Livestock was the most important agricultural industry. Total gross output in 1963 was \$15.5 million. Value added amounted to \$10.9 million. More than \$13 million of that was exported. The share of total farms with sales over \$10,000 per year has ranged from 60 to 66 percent in recent years. Farm size had increased steadily in the sub-basin since 1939. In 1960, the average farm in the San Juan area was approximately 1,800 acres. This included 72 acres of cultivated crop land and 35 acres of irrigated crop land.^{7/}

Table II-7 also indicates that manufacturing is even less important in the San Juan than in the Upper Main Stem. The largest manufacturing industry was Food and Kindred Products with a total gross output of \$8.9 million. This is followed by Lumber and Wood production with \$5.4 million; Stone, Clay and Glass production with \$4.1 million; and Printing and Publishing with a total gross output of \$2.7 million.

The largest exporter in the service industry is Transportation, with exports of more than \$25 million from a total

^{7/} See Lynn W. Wilkes, "Some Economic Features of Agriculture and Forestry in the San Juan Sub-Basin of the Colorado River Basin," and Bernard Udis (editor), An Analysis of the Economy of the UMS Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, (Boulder: Bureau of Economic Research, University of Colorado, August 1967), p. 75.

SAN JUAN SUB-BASIN - OUTPUT, EMPLOYMENT AND VALUE ADDED, 1963
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1963 Output	Percent Total 1963 Output	1963 Employment	Percent Total 1963 Employment	1963 Value Added	Percent Total 1963 Value Added
Range Livestock	\$ 15.5	2.6%	2,358	6.9%	\$ 10.9	3.2%
Dairy	1.9	.3	103	.3	1.2	.3
Field Crops	3.6	.6	127	.4	2.8	.8
Fruit	.7	.1	17	*	.3	.1
Forestry	2.1	.4	693	2.0	1.8	.5
All Other Agriculture	.9	.2	50	.1	.3	.1
Coal	.2	*	227	.7	.1	*
Oil and Gas	170.9	28.7	1,828	5.4	69.0	20.2
Uranium	52.6	8.9	810	2.4	14.2	4.1
All Other Mining	8.0	1.4	209	.6	3.1	.9
Food and Kindred	8.9	1.5	376	1.1	3.3	1.0
Lumber and Wood	5.4	.9	552	1.6	2.4	.7
Printing and Publishing	2.7	.5	269	.8	1.3	.4
Stone, Clay and Glass	4.1	.7	195	.6	1.2	.3
All Other Manufacturing	16.4	2.8	897	2.6	3.2	.9
Wholesale Trade	22.8	3.9	1,053	3.1	10.4	3.0
Service Stations	3.6	.6	658	1.9	2.2	.6
All Other Retail	34.2	5.8	3,674	10.8	18.4	5.4
Eating and Drinking	9.3	1.6	1,379	4.0	3.4	1.0
Agricultural Services	.8	.1	39	.1	.3	.1
Oil Field Services	35.2	6.0	1,252	3.7	11.1	3.2
Lodging	7.2	1.2	1,505	4.4	3.1	.9
All Other Services	17.1	2.9	1,340	3.9	9.3	2.7
Transportation	60.0	10.1	1,147	3.4	31.5	9.2
Electric Energy	8.1	1.4	659	1.9	2.4	.7
Other Utilities	14.6	2.5	1,104	3.2	4.6	1.3
Contract Construction	54.9	9.3	3,982	11.7	15.7	4.6
Rentals and Finance	29.5	5.0	950	2.8	20.1	5.8
Households	----	---	4,922	14.4	45.5	13.2
Local Government	----	---	808	2.4	11.6	3.4
State and Federal Gov't.	----	---	961	2.8	32.3	9.4
Final Payments	----	---	-----	---	6.9	2.0
Total	\$591.2	100.0%	34,144	100.0%	\$343.9	100.0%

* Negligible

gross output of \$60 million. The remaining Services industries supply local and interindustry requirements.

It is interesting to note that the largest single contributor to value added was not the sub-basin's largest employer. The Oil and Gas industry contributed 20.2 percent of gross regional product but employed only 5.4 percent of the labor force. Range Livestock, on the other hand, generated only 3.2 percent of GRP but employed 6.9 percent of the labor force.

Recreation expenditures in the San Juan were \$12.7 million in 1963, more than one-third less than in the Upper Main Stem.

Average income in the San Juan Sub-basin was \$1,554 in 1960--\$147 less than the Upper Main Stem, and \$387 less than the national average.

The Role of Public Lands in the San Juan Sub-Basin. The Federal government owns 12,023,000 acres in the San Juan. This represents 45.7 percent of the sub-basin's total land area (table II-8). Most of this is managed by the Bureau of Land Management even though the U. S. Forest Service and the Bureau of Reclamation hold significant areas.

TABLE II-8

PUBLIC LAND OWNERSHIP IN THE SAN JUAN SUB-BASIN,
BY AGENCY, 1966
(Thousands of Acres)

Bureau of Land Management	7,473.7
U. S. Forest Service	3,028.8
Bureau of Reclamation	1,129.8
National Park Service	386.5
All Other Agencies	4.2
Total Public Lands	12,023.0
Total Regional Acreage	24,296.0
Percent Public Lands of Total Regional Acreage	45.7%

TABLE II-9

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LANDS
(Thousands of 1963 Dollars at Producers' Prices)

SAN JUAN SUB-BASIN - 1963

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 15,522	\$6,209	40.0 %									\$ 6,209	40.0 %
Forestry	2,052			\$1,806	88.0 %							1,806	88.0
Oil and Gas	170,908					\$39,309	23.0 %					39,309	23.0
Coal	198							\$ 23	11.4 %			23	11.4
Eating & Drinking	9,284									\$ 5,218	56.2%	5,218	56.2
Lodging	7,192									2,496	34.7	2,496	34.7
Other Retail	34,206									479	1.4	479	1.4
Service Stations	3,608									1,288	35.7	1,288	35.7
Services	17,095									3,248	19.0	3,248	19.0
All Other Sectors	331,147												
Total	\$591,212	\$6,209	1.05%	\$1,806	.31%	\$39,309	6.64%	\$ 23	*	\$12,729+	2.15%	\$60,076	10.15%

* Negligible

+ 91.8% of Total Recreation Expenditures.

The most important public land output in the San Juan Sub-basin was the extraction of \$39.3 million of oil and gas from public lands (table II-9). This represented 23 percent of total oil and gas production.

Expenditures associated with recreation on public lands ranked second, representing \$12.7 million of the sub-basin's total output. Expenditures in Eating and Drinking establishments were \$5.2 million, 56.2 percent of their total trade. Expenditures for Lodging were \$2.5 million, \$1.3 million were spent in Service Stations, and \$3.2 million on Other Services.

The provision of grazing forage ranks third, supporting \$6.2 million, 40 percent, of the Range Livestock total gross output. The sale of public Timber supports \$1.8 million, or 88 percent of Forestry activity. The extraction of leasable Coal supports 11.4 percent of the total Coal industry's output.

Because of Oil and Gas production on public lands and expenditures associated with recreation on public lands, almost 10.2 percent of the sub-basin's total gross output can be attributed to public lands. This makes the San Juan Sub-basin more dependent upon public lands than the Upper Main Stem.

The Green River Sub-Basin

Geography and Population. The Green River Sub-basin is the most northerly of the three sub-basins in the Upper Colorado River Basin. It contains slightly more than 29.4 million acres, and is the largest of the three. For purposes of the present study, the Green Sub-basin has been defined to include 12 counties in Wyoming, Colorado, and Utah. The Wyoming counties include Lincoln, Sublette, Sweet Water, and Uinta. The Utah counties are Carbon, Dagget, Duchesne, Emery and Uintah. Three counties in Colorado--Moffat, Rio Blanco, and Routt--round out the representative counties of the Green River Sub-basin. Geographic detail of the Green is shown in figure II-4.

Geographically, the Green River Sub-basin occupies the counties of northwestern Colorado, northeastern Utah, and

THE GREEN RIVER SUB-BASIN

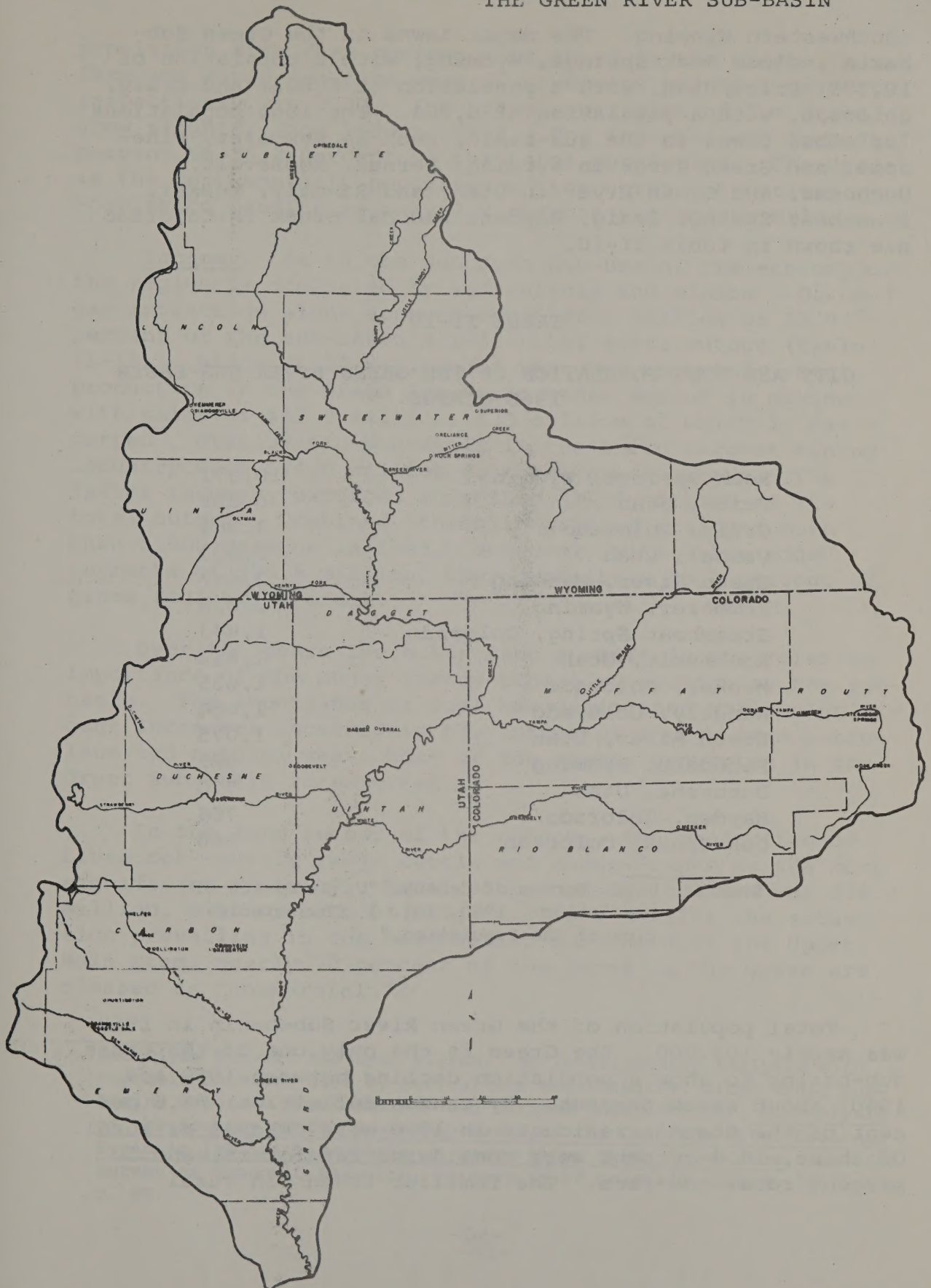


FIGURE II-4

southwestern Wyoming. The major towns in the Green Sub-basin include Rock Springs, Wyoming, with a population of 10,371; Price, Utah, with a population of 6,802; and Craig, Colorado, with a population of 3,984. The 1960 populations for other towns in the sub-basin, such as Kemmerer, Pinedale, and Green River in Wyoming; Vernal, Roosevelt, Duchesne, and Green River in Utah; and Rangely, Meeker, Steamboat Spring, Craig, Hayden, and Oak Creek in Colorado are shown in table II-10.

TABLE II-10

CITY AND TOWN POPULATION OF THE GREEN RIVER SUB-BASIN
1960 CENSUS

Rock Springs, Wyoming	10,371
Price, Utah	6,802
Craig, Colorado	3,984
Vernal, Utah	3,655
Green River, Wyoming	3,497
Kemmerer, Wyoming	2,028
Steamboat Spring, Colorado	1,843
Roosevelt, Utah	1,812
Meeker, Colorado	1,655
Rangely, Colorado	1,464
Green River, Utah	1,075
Pinedale, Wyoming	965
Duchesne, Utah	770
Hayden, Colorado	764
Oak Creek, Colorado	666

Source: U. S. Bureau of Census, "U. S. Census of Population: 1960, Vol. I, Characteristics of the Population."

Total population of the Green River Sub-basin in 1960 was nearly 103,000. The Green is the only one of the three sub-basins to show a population decline between 1950 and 1960; about seven percent. By census definition, 64.8 percent of the Green's residents in 1960 were classed as rural. Of those, 14.8 percent were considered rural farm, and 50 percent rural non-farm. The familiar trend in rural

population from farm residence is noted in the Green. Rural farm and rural non-farm were 21.1 percent and 46.1 percent, respectively, in 1950. The urban population of the Green grew slightly from 1950 to 1960. The increase was from 32.7 percent to 35.2 percent of the total population. The Green is the most sparsely populated of the three sub-basins. Population density is only 2.2 persons per square mile.

Economy. As in the San Juan Sub-basin, the economy of the region is dominated by agriculture and mining. Oil and gas extraction alone account for \$126.3 million or 23.9 percent of the sub-basin's 1963 total gross output (table II-11). Almost \$120 million of that was exported. Coal production in the Green Sub-basin ranks second in mining with sales of \$47.9 million, \$35 million of which is exported. Uranium and Non-fuels is the third largest mining industry with \$24.0 million in total gross output. The latter industry exported more than \$11.4 million of its total output. Combined, these industries employed more than 5,300 persons in 1963. Moreover, with value added payments of \$95.5 million, they contribute 28.7 percent of gross regional product.

Over the years there has been a shift in the relative importance of the major energy-producing sectors in the sub-basin. The importance of coal has diminished while significant increases occurred in the output of energy from petroleum and natural gas. Most of the energy generated in the Green Sub-basin is exported.

In the farm sector of the economy, the production of Livestock--mostly range cattle and sheep--ranks as the most significant activity. Total output of Agriculture was \$50.2 million, with exports of \$32.0 million. Unlike the situation prevailing in the neighboring sub-basin of the Upper Main Stem, nearly 70 percent of the farms in the Green are classed as "commercial."^{8/}

^{8/} See Clyde Stewart and Lynn Wilkes, "An Interindustry Analysis with Emphasis on Water Used by Agriculture and Forestry, Green River Sub-Basin, Colorado River Basin," and Bernard Udis (editor), An Analysis of the Economy of the Green Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, (Boulder: Bureau of Economic Research, University of Colorado, August 1967), p. 89.

GREEN RIVER SUB-BASIN OUTPUT, EMPLOYMENT AND VALUE ADDED - 1963
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1963 Output	Percent Total 1963 Output	1963 Employment	Percent Total 1963 Employment	1963 Value Added	Percent Total 1963 Value Added
Agriculture	\$ 50.2	9.4%	4,966	13.5%	\$ 35.1	10.7%
Forestry	1.1	.2	328	.9	.9	.3
Oil and Gas	126.3	23.9	1,006	2.8	57.6	17.1
Coal	47.9	9.0	2,604	7.2	28.6	8.8
Uranium and Non-Fuels	24.0	4.5	1,789	4.9	9.3	2.8
Food and Kindred	8.6	1.6	422	1.2	1.8	.6
Lumber and Wood	2.7	.5	319	.9	.9	.3
Printing and Publishing	.9	.2	252	.7	.5	.2
Stone, Clay and Glass	1.8	.3	114	.3	.9	.3
Chemicals, Petroleum, Coal, Other Manufacturing	3.8	.7	284	.8	1.1	.3
Wholesale Trade	11.0	2.1	708	1.9	6.1	1.9
Service Stations	4.4	.8	970	2.7	2.5	.8
Eating and Drinking	10.9	2.1	1,489	4.1	2.6	1.1
Other Retail	43.0	8.1	3,928	10.8	17.5	5.4
Oil Field Services	35.9	6.8	968	2.7	3.8	1.2
Lodging	9.9	1.9	1,780	4.9	2.9	.9
Other Services	10.5	2.0	1,030	2.8	4.9	1.5
Transportation	28.1	5.3	2,594	7.1	15.2	4.7
Electric Energy	18.2	3.4	846	2.3	6.1	1.9
Other Utilities	9.8	1.8	430	1.2	2.0	.6
Contract Construction	52.8	10.0	2,500	6.9	12.5	3.8
Rentals and Finance	28.6	5.4	671	1.8	23.9	7.3
Households	----	---	4,788	13.2	43.1	13.2
Local Government	----	---	736	2.0	14.2	4.3
State and Federal Government	----	---	877	2.4	24.0	7.3
Final Payments	----	---	-----	---	8.7	2.7
Total	\$530.4	100.0%	36,399	100.0%	\$326.7	100.0%

As in the other two sub-basins, manufacturing is relatively unimportant. The largest manufacturing industry, again, is Food and Kindred Products with a total 1963 output of \$8.6 million or 1.6 percent of the sub-basin's total output.

While the Oil and Gas is the largest single contributor to gross regional product, Agriculture is the largest single employer, providing 4,966 jobs in 1963. The manufacturing industries contribute very little in terms of gross regional product or employment. Most of the employment and income outside the agriculture and mining sectors is to be found in the service industries.

With total recreation expenditures of \$26.0 million in 1963, the Green was, of the three sub-basins, second most dependent on recreation such as hiking, camping, and big game hunting.

The average annual per capita income in the Green was \$1,656 in 1960. This amount was \$285 less than the national average in that year.

The Role of Public Lands in the Green River Sub-Basin.
Public lands comprise 16,122 thousand acres in the Green, or 54.8 percent of the sub-basin's total land area (table II-12). More than 70 percent of the public land is managed by the Bureau of Land Management.

TABLE II-12

PUBLIC LAND OWNERSHIP IN THE GREEN RIVER SUB-BASIN,
BY AGENCY, 1966
(Thousands of Acres)

Bureau of Land Management	11,841.0
U. S. Forest Service	3,337.8
Bureau of Reclamation	689.9
National Park Service	185.0
All Other Agencies	68.2
Total Public Lands	16,121.9
Total Regional Acreage	29,440.0
Percent Public Lands of Total Regional Acreage	54.8%

TABLE II-13

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LANDS
(Thousands of 1963 Dollars at Producers' Prices)

GREEN RIVER SUB-BASIN - 1963

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 30,232	\$7,459	23.8 %									\$ 7,459	23.8 %
Forestry	1,053			\$ 984	93.4 %							984	93.4
Oil and Gas	126,261					\$85,857	68.0 %					85,857	68.0
Coal	47,860							\$45,898	95.9 %			45,898	95.9
Eating & Drinking	10,885									\$ 6,183	56.8 %	6,183	56.8
Lodging	9,908									3,498	35.3	3,498	35.3
Other Retail	42,998									602	1.4	602	1.4
Service Stations	4,401									1,598	36.3	1,598	36.3
Services	10,489									3,870	36.9	3,870	36.9
All Other Sectors	246,207												
Total	\$530,294	\$7,459	1.41%	\$ 984	.18%	\$85,857	16.23%	\$45,898	8.67%	\$15,751*	2.98%	\$155,949	29.47%

* 83.2% of Total Recreation Expenditures.

Of the three sub-basins, the Green is the most heavily dependent, economically, on public land. Overall, \$155.9 million, or 29.5 percent, of the economy's output either took place on, or was directly attributable to, activity on public lands (table II-13). The extraction of leasable oil and gas from public lands amounted to \$85.9 million in 1963, or 68 percent of the Oil and Gas industry's total gross output. The extraction of Coal from public lands ranked second in overall importance, accounting for \$45.9 million, or 95.5 percent of the Coal industry's total gross output.

Expenditures associated with recreation on public lands ranked third in importance in the sub-basin, with \$15.8 million in industry sales attributed to tourists who were visiting public lands. Eating and Drinking establishments, Lodging, Service Stations, and a number of other services were highly dependent upon tourists visiting public lands, as was the case in the other two sub-basins. Sales to these tourists for these activities were 56.8 percent, 35.3 percent, 36.3 percent, and 36.9 percent of total sales, respectively.

The provision of forage for livestock supported 23.8 percent of the total Livestock production, or \$7.5 million of total gross output. Sales of public land Timber supported 93.4 percent of the Forestry industry's total gross output. In absolute size, however, the latter industry is quite small.

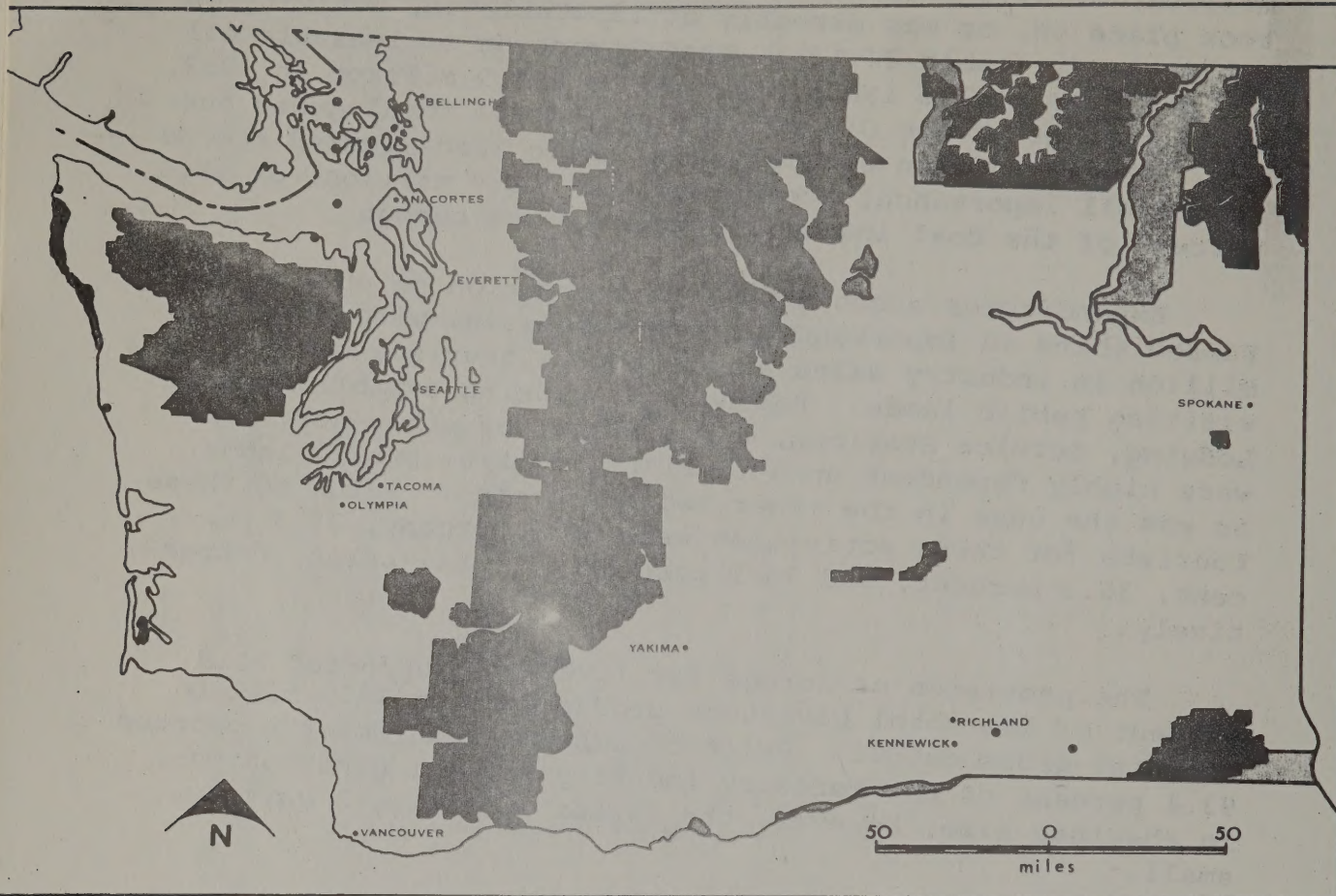
Washington State





Geography

The area of Washington State is approximately 44.2 million acres. Figure II-5 shows the location of the state. It is bordered by the State of Idaho on the east, the State of Oregon to the south, British Columbia, Canada, to the north, and about 186 miles of the Pacific Ocean to the west. The state's tidewater line is more than 2,800 miles long, 2,000 miles of which are in Puget Sound, the state's primary waterborne commerce outlet. The Columbia River, which provides most of the area's hydroelectric power, runs through Eastern Washington and along much of the Washington-Oregon border.

FIGURE II-5

LANDS ADMINISTERED BY THE FEDERAL GOVERNMENT IN WASHINGTON STATE



PUBLIC LANDS	
NATIONAL FORESTS	
NATIONAL PARKS & MONUMENTS	
WILDLIFE REFUGES	

COLOR ILLUSTRATIONS REPRODUCED
IN BLACK AND WHITE

With almost 23 million acres in timber land, Washington is more than one-half forested. About 20 million acres are classified as commercial forest; most of the remaining forest is included in National Parks and other types of recreational areas. In Western Washington, Douglas fir is the most important species; in Eastern Washington, ponderosa pine is the most important. In the next section, the importance of timber and timber products to the state's economy is described. A considerable portion of Washington's timber supply is managed by the United States Forest Service. Timber is one of the two primary public outputs analyzed for Washington.

Washington contains three Standard Metropolitan Statistical Areas with more than 250,000 residents. These are Seattle-Everett and Tacoma in Western Washington, and Spokane in Eastern Washington. Most of the state's 2.76 million inhabitants are centered around the three-city complex of Seattle, Everett, and Tacoma. Combined population of these cities was more than 1.4 million persons in 1960. The Spokane area had a 1960 population of 278,300 persons. Table II-14 shows 1960 population estimates for the other major population centers in the State of Washington.

TABLE II-14

CITY AND TOWN POPULATION OF WASHINGTON STATE
1960 CENSUS

Standard Metropolitan Statistical Areas:

Seattle-Everett	1,107,213
Tacoma	321,590
Spokane	278,333

Other Cities and Towns:

Western Washington	
Bellingham	34,688
Aberdeen-Hoquiam	29,503
Bremerton	28,922
Longview	23,349

Eastern Washington

Tri-Cities (including Richland, Pasco and Kennewick)	52,314
Walla Walla	24,536
Wenatchee	16,726

By census definition, 68.1 percent of Washington's population was classified as urban. This compares with 69.9 percent nationally, and 35 percent to 42 percent for the three Colorado River sub-basins. The population density of Washington is approximately 40 persons per square mile. Overall, this is 19 fewer than the national average, but considerably greater than the Colorado study areas. Almost 75 percent of Washington's residents are in Western Washington, hence the population density there is nearer the national average. The population density of Eastern Washington is about the same as the Colorado study region.

Economy

In contrast to the Upper Colorado sub-basins, Washington is more dependent upon manufacturing than basic resources. More than 20 percent of the state's total output is produced by Aerospace, Shipbuilding, Petroleum Refining, and other manufacturing industries (table II-15). The largest single industry is Aerospace, which had a total gross output of \$1,210.1 million in 1963. Aerospace is also one of the heaviest exporters, with sales outside the state of \$1,194.2 million.

Other manufacturers also provide substantial exports for the state's economy. Ship and boat building exports are more than \$200 million from a total output of \$218 million. Non-ferrous metal mills export more than \$380 million from a total output of \$418 million. The Petroleum and Chemicals industries export more than \$300 million of a total gross output of \$574.8 million.

Although smaller than manufacturing in terms of output, employment, and value added, resource sectors make substantial contributions to the state's economy. In 1963, the Agriculture sectors combined had a total gross output of more than \$630 million. Forestry and Mining produced almost \$150 million in 1963.

The importance of resource sectors to Washington's economy extends beyond the simple extraction of minerals or the production and sale of unprocessed agricultural products. In contrast to the Upper Colorado River Basin study regions, a substantial portion of Washington's raw materials are processed within the state. For example,

TABLE II-15

WASHINGTON STATE OUTPUT, EMPLOYMENT AND VALUE ADDED - 1963
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1963 Output	Percent Total 1963 Output	1963 Employment	Percent Total 1963 Employment	1963 Value Added	Percent Total 1963 Value Added
Livestock and Products	\$ 235.4	1.9%	26,836	2.6%	\$ 78.9	.9%
Other Agriculture, Fishing, Mining	498.1	4.0	17,745	1.7	310.4	3.4
Food and Kindred Products	1,113.0	8.9	26,330	2.5	351.5	3.9
Timber	353.3	2.8	11,435	1.1	210.0	2.3
Sawmills	327.2	2.6	15,811	1.5	149.4	1.6
Plywood	196.1	1.6	9,033	.9	79.1	.9
Pulp, Paper, and Paperwood Mills	689.1	5.5	18,808	1.8	336.6	3.7
Other Wood	135.5	1.1	7,705	.7	46.2	.5
Chemicals	309.3	2.5	10,997	1.1	219.0	2.4
Petroleum Refining	265.5	2.1	1,284	.1	63.8	.7
Stone, Clay and Glass	131.2	1.0	5,365	.5	53.7	.6
Primary Metals	486.3	3.9	20,806	2.0	193.8	2.1
Aerospace	1,210.1	9.7	64,241	6.2	629.3	6.9
Other Non-Durable Manufacturing	241.0	.2	21,448	2.1	130.9	1.4
Other Durable Manufacturing	710.3	5.7	26,511	2.5	386.8	4.3
Transportation, Communi- cation, and Public Utilities	1,159.4	9.3	80,786	7.8	851.8	9.4
Wholesale and Retail Trade	1,753.7	15.7	220,030	21.2	1,418.3	15.8
Services	1,655.3	13.2	211,420	20.3	1,204.0	13.3
Construction	1,033.5	8.3	63,090	6.1	424.9	4.7
Government	NA*	---	180,000	17.3	1,074.0	11.8
Household	NA	---	-----	----	853.6	9.4
Total	\$12,503.3	100.0%	1,039,681	100.0%	\$9,066.0	100.0%

*NA - Not Applicable

the Livestock and Products industry exported only \$4.5 million of a total output of \$235.4 million. In 1963, \$173.8 million of Livestock output was sold to the Meat and Dairy Products industry, where it was processed. It was then either sold as a final product to consumers or exported from the region with the exception of about ten percent which was consumed by local industries.

In 1963, more than \$1.1 billion output from Forest products processing sectors was based on the state's Timber supply.

In-region processing of basic resources of this magnitude provides the basis for a well-developed economy in the input-output sense.^{9/}

The Wholesale and Retail Trade industry was the largest employer in 1963, employing 220,030 persons, a full 21 percent of the labor force. The Services industry followed, employing 211,420. Altogether, the trade and service industries employed 49.3 percent of the labor force and contributed 47.8 percent of Gross State Product.

The manufacturing industries combined employ 19.4 percent of the labor force. In that group, some of the largest employers were the Aerospace industry with 64,241 and the forest products industries with 62,792. Combined, the manufacturing industries generated 25.2 percent of Gross State Product.

Government is the third largest employer with 17.3 percent of the labor force. The resource sectors accounted for 7.9 percent of employment--Contract Construction for the remaining 6.1 percent. These three sectors generated the remaining 27 percent of Gross State Product.

9/ A well-developed economy is not to be confused with an efficient economy. Describing an economy as well developed, or poorly developed, carries no connotations of good or bad in an input-output sense. This merely indicates the degree of economic interdependence of an economy. By this definition, Washington's economy is more developed than the economies of any of the three Upper Colorado River sub-basins.

The Role of Public Lands in the State of Washington

The public lands comprise 11,397 thousand acres in Washington State, or 25.8 percent of the state's total land area (table II-16). Most of this, or 9,690,700 acres, is managed by the U. S. Forest Service.

TABLE II-16

PUBLIC LAND OWNERSHIP IN WASHINGTON STATE,
BY AGENCY, 1966
(Thousands of Acres)

Bureau of Land Management	274.7
U. S. Forest Service	9,690.7
Bureau of Reclamation	131.7
National Park Service	1,082.7
All Other Agencies	216.9
Total Public Lands	11,396.7
Total Regional Acreage	44,160.0
Percent Public Land of Total State Acreage	25.8%

Public lands are involved in two activities of significance to Washington's economy. The first is the sale and cutting of Federal timber; the second involves expenditures related to recreation on public lands. A third, but relatively minor activity, is the use of public lands for grazing. A small amount of feed requirements for Livestock and Livestock Products is supplied from public lands. Mining of leasable minerals on public lands in the State of Washington was negligible in 1963.

The most important of these activities is the sale of Federal timber. These sales amounted to \$104.6 million in

1963. This was about 30 percent of the Timber industry's total sales in that year.^{10/}

The second most important contribution of public lands are expenditures associated with outdoor recreation. While visiting public lands, non-resident tourists spent a total of \$30.1 million. Residents of the state spent another \$38 million while visiting public lands in 1963. Table II-17 shows in detail how those expenditures were allocated among the various Washington industries.

While expenditures on Wholesale and Retail Trade and the Services industries accounted for \$13.8 million and \$13.6 million, respectively, the Petroleum Refining industry and Other Non-Durable Manufacturing relied relatively more heavily on recreation expenditures. The Petroleum Refining industry sold \$7.7 million to recreationists, 2.9 percent of their total gross output.

Other Non-Durable Manufacturing industries sold \$6.1 million, or 2.5 percent of their total gross output, to recreationists using public land. Dollar sales in Wholesale and Retail Trade industry, and the Services industry, were approximately double sales in Petroleum Refining and Other Non-Durable Manufacturing, however, sales to recreationists involve only 0.8 percent of their total sales.

The sale of Federal grazing permits accounted for 0.5 percent of total Livestock and Livestock Products, or \$1.9 million in 1963.

Total economic activity in the State of Washington attributable to either public land outputs or recreation opportunities on public lands in 1963 was \$174.6 million. This is about 1.5 percent of total output.

^{10/} It should also be noted that Washington State timber processors are dependent upon public timber if public lands are the source of their supply. This fact is extremely important in analyzing the impact of possible public policy changes involving the cut of public timber. Due to definitional problems, however, the dependence of processors on public lands was not included in table II-17 and hence, the importance of public lands in Washington State is understated. The same is true for the corresponding 1980 estimates (table II-28).

TABLE II-17

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO PUBLIC LANDS

(Millions of 1963 Dollars at Producers' Prices)

WASHINGTON STATE - 1963

Sector	State Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
						Resident		Non-Resident			
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Livestock, and Products	\$ 235.4	\$ 1.9	.5%							\$ 1.9	.5%
Other Agriculture, Fishing, Mining	498.1					\$ 1.0	.2%	\$.8	.2%	1.8	.4
Food and Kindred Products	1,113.0					11.5	1.0	9.1	.8	20.6	.9
Timber	353.3			\$104.6	29.6%					104.6	29.6
Petroleum Refining	265.5					4.3	1.6	3.4	1.3	7.7	2.9
Other Non-Durable Manufacturing	241.0					3.4	1.4	2.7	1.1	6.1	2.5
Other Durable Manufacturing	710.3					.8	.1	.6	.1	1.4	.2
Transportation, Communications, Public Utilities	1,159.4					1.7	.2	1.4	.1	3.1	.3
Wholesale and Retail Trade	1,753.7					7.7	.4	6.1	.4	13.8	.8
Services	1,655.3					7.6	.5	6.0	.4	13.6	.8
All Other Sectors	4,518.3					-	-	-	-	-	-
Total	\$12,503.3	\$ 1.9	*	\$104.6	.8%	\$38.0+	.3%	\$30.1+	.2%	\$174.6	1.5%

* Negligible

+ 26.7 percent of total recreation expenditures

The Upper Main Stem Sub-Basin

Economy

Total gross output in the Upper Main Stem should reach \$862.2 million by 1980 (table II-18). The economy is expected to remain dominated by mineral extraction and agricultural activity. Output of the Uranium industry in 1980 is expected to be \$88.9 million. Total livestock production should approach a total gross output of \$57 million. Combined agricultural output should be more than \$20 million.

Mixed trends in the importance of various industries are expected. Range Livestock output is expected to decrease from 5.0 percent of the 1963 total to 3.5 percent of the 1980 total. Feeder Livestock output, on the other hand, is anticipated to increase from 0.9 percent of the 1963 total to 3.1 percent of the 1980 total. The Uranium industry's share of total output is expected to fall from 16.0 percent in 1963 to 10.3 percent in 1980. Overall, the relative importance of the resource sectors will fall slightly, while the service sectors should gain slightly.

Total value added should increase to \$700.9 million by 1980, up from \$451.9 million in 1963. Most of this will be generated by the trade and service industries, the basic resource sectors declining in their relative contributions to Gross Regional Product.

Total employment is expected to reach 57.6 thousand by 1980, even though employment in a number of industries will decline. For example, employment in Contract Construction is expected to fall from 3,674 to 3,670 by 1980. The decline will be more marked in the Uranium industry where employment will fall to 1,230 in 1980 from 1,985 in 1963. Employment in most industries, however, is expected to rise.

^{11/} See Appendix D for a complete discussion of the methods by which the economic projections to 1980 were obtained. Appendix A indicates the methodology of projecting economic activity on public lands for that year.

(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1980 Output	Percent Total 1980 Output	1980 Employment	Percent Total 1980 Employment	1980 Value Added	Percent Total 1980 Value Added
Range Livestock	\$ 30.1	3.5%	5,287	9.2%	\$ 19.5	2.8%
Feeder Livestock	26.9	3.1	84	.1	1.0	.1
Dairy	2.6	.3	157	.3	1.4	.2
Food Field Crops	6.9	.8	395	.7	4.3	.6
Truck Crops	1.2	.1	226	.4	.5	.1
Fruit	9.5	1.1	91	.2	3.8	.5
Forestry	3.7	.4	1,523	2.6	3.2	.5
All other Agriculture	2.4	.3	297	.5	.8	.1
Coal	8.2	1.0	578	1.0	5.2	.7
Oil and Gas	1.0	.1	308	.5	.2	*
Uranium	88.9	10.3	1,230	2.1	31.0	4.4
Zinc	16.3	1.9	1,112	1.9	7.9	1.1
All Other Mining	8.9	.1	489	.8	6.5	.9
Food and Kindred	34.8	4.0	949	1.6	12.9	1.8
Lumber and Wood	6.2	.7	416	.7	2.2	.3
Printing and Publishing	7.4	.9	844	1.5	3.8	.5
Fabricate Metals	2.6	.3	102	.2	.9	.1
Stone, Clay and Glass	2.8	.3	59	.1	1.1	.2
All Other Manufacturing	18.3	2.1	661	1.2	5.3	.8
Wholesale Trade	42.7	5.0	2,340	4.1	18.8	2.7
Service Stations	8.7	1.0	1,200	2.1	6.2	.9
All Other Retail	90.8	10.5	8,774	15.7	52.1	7.4
Eating and Drinking	29.2	3.4	2,595	4.5	10.4	1.5
Agriculture Service	6.8	.8	201	.3	3.5	.5
Lodging	17.5	2.0	3,093	5.4	9.2	1.3
All Other Services	46.9	5.4	3,054	5.3	19.1	2.7
Transportation	64.2	7.4	1,904	3.3	33.3	4.8
Electric Energy	15.2	1.8	464	.8	8.1	1.2
Other Utilities	30.0	3.5	934	1.6	14.9	2.1
Contract Construction	143.8	17.7	3,670	6.4	36.0	5.1
Rentals and Finance	87.7	10.2	2,429	4.2	73.6	10.5
Households	----	----	8,293	14.4	136.2	19.6
Local Government	----	----	1,746	3.0	44.8	6.4
State and Federal Gov't.	----	----	1,891	3.3	87.8	12.5
Final Payments	----	----	-----	---	35.4	5.1
Total	\$862.2	100.0%	57,596	100.0%	\$700.9	100.0%

*Negligible

The New Role of Public Lands in the Upper Main Stem Sub-Basin

In 1980, expenditures associated with recreation on public lands are expected to be about \$51.4 million (table II-19). This represents 5.96 percent of the sub-basin's total gross output. Of that total, \$20.8 million will be spent on Eating and Drinking establishments, \$10.3 million on Lodging, and \$12.9 million on Other Services. These expenditures represent more than 71 percent of Eating and Drinking establishments' sales, 59 percent of Lodging services, and 27.5 percent of the sales of Other Services. Service Stations are expected to sell \$5.3 million to recreationists on public lands. This will be a major component of their final market.

Sales of Federal grazing permits are expected to support slightly more than \$8 million of Range Livestock production, 26.7 percent of that industry's total output. In other basic resource sectors, the extraction of leasable Coal from public lands is projected to be \$4.7 million. This represents 57 percent of the Coal industry's expected total gross output. Sales of public Timber should support \$3.4 million of Forestry output, or 94 percent of that industry's total. Extraction of leasable Oil and Gas is anticipated to be \$0.9 million. While the latter amount is not large absolutely, it represents 93 percent of that industry's total output. Overall, the output attributable to public lands is expected to increase from 6.2 percent in 1963 to 7.9 percent in 1980. This increase is due entirely to the growth in expenditures related to recreation on public lands, since the relative importance of the basic resource sectors is expected to fall.

Output Multipliers

The concept of an output multiplier was discussed in Chapter I. As a general tool in analyzing the total impact of some initial change in the sales and output of an industry, the output multiplier is invaluable. The expected 1980 output multipliers for the Upper Main Stem are shown in table II-20. There it can be seen that the multipliers range from a low of 1.38 in All Other Manufacturing to a high of 2.78 in Feeder Livestock. The variation in multipliers among industries is high so that it is not possible

TABLE II-19

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LANDS
(Thousands of 1963 Dollars at Producers' Prices)

UPPER MAIN STEM - 1980

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 30,803	\$8,032	26.7 %									\$ 8,032	26.7 %
Forestry	3,658			\$3,439	94.0 %							3,439	94.0
Oil and Gas	1,015					\$ 944	93.0 %					944	93.0
Coal	8,177							\$4,661	57.0 %			4,661	57.0
Eating & Drinking	29,191									\$20,813	71.3 %	\$20,813	71.3
Lodging	17,471									10,325	59.1	10,325	59.1
Other Retail	90,788									2,088	2.3	2,088	2.3
Service Stations	8,722									5,251	60.2	5,251	60.2
Services	46,897									12,897	27.5	12,897	27.5
All Other Sectors	625,288												
Total	\$862,010	\$8,032	.93%	\$3,439	.40%	\$ 944	.11%	\$4,661	.54%	\$51,374*	5.96%	\$68,450	7.94%

* 88.5% of total recreation expenditures.

TABLE II-20

OUTPUT MULTIPLIERS - UPPER MAIN STEM SUB-BASIN
Total Change in Output Given a \$1 Change in the Industrial Sector Output

Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier
1. Range Livestock	\$ 2.05	12. Zinc	\$ 1.60	22. All Other Retail	\$ 2.13
2. Feeder Livestock	2.78	13. All Other Mining	1.83	23. Eating & Drinking Places	2.02
3. Dairy	2.11	14. Food and Kindred	2.71	24. Agriculture Services	1.67
4. Food Field Crops	2.00	15. Lumber and Wood	2.29	25. Lodging	1.97
5. Truck Crops	2.26	16. Printing & Publishing	1.63	26. All Other Services	2.01
6. Fruit	2.26	17. Fabricated Metals	1.52	27. Transportation	1.81
7. Forestry	1.72	18. Stone, Clay & Glass	2.04	28. Electric Energy	1.95
8. All Other Agriculture	2.09	19. All Other Manufacturing	1.38	29. Other Utilities	2.18
9. Coal	1.75	20. Wholesale Trade	1.61	30. Contract Construction	2.10
10. Oil and Gas	1.64	21. Service Stations	2.02	31. Rentals & Finance	1.91
11. Uranium	1.85				

to determine whether the multipliers in the resource sectors are significantly higher or lower than those in the manufacturing or service sectors. However, they are useful for shedding light on individual issues involving initial output changes in selected industries in the Upper Main Stem.

The San Juan Sub-Basin

Economy

Total gross output in the sub-basin is anticipated to be about \$793.9 million (table II-21). More than 20 percent of this amount will be produced by the Oil and Gas and the Uranium industries. With more than \$250 million being produced in either agricultural or mining activities, the sub-basin will depend on the resource sectors for more than 30 percent of total output.

More specifically, the Oil and Gas industry should produce \$161.4 million in 1980 and Uranium \$49.1 million. Range Livestock and Other Agriculture activities are relatively less important. Projected output in 1980 for Range Livestock is \$17.9 million. All Other Agricultural activity will be about \$12 million.

Manufacturing is expected to play a relatively small role in the economic activity of the San Juan. Services, on the other hand, are expected to provide a majority of the employment positions for the San Juan's labor force in 1980, employing about 6.1 thousand in Other Retail, 2.0 thousand in Eating and Drinking establishments, and about 5.1 thousand in Contract Construction.

As in the Upper Main Stem, the basic resource sectors are expected to decline in relative importance and occasionally in absolute importance. The Oil and Gas industry, for example, contributed 28.7 percent of the San Juan's 1963 total output. In 1980, it should produce only 20.6 percent. Moreover, the total output in that industry is expected to fall from a 1963 output of \$170.9 million to a projected 1980 output of \$161.4 million. A decline in output is also expected in the Uranium industry. Most of the other industries, however, are expected to grow.

SAN JUAN SUB-BASIN OUTPUT, EMPLOYMENT AND VALUE ADDED, 1980
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1980 Output	Percent Total 1980 Output	1980 Employment	Percent Total 1980 Employment	1980 Value Added	Percent Total 1980 Value Added
Range Livestock	\$ 17.9	2.2%	2,506	6.1%	\$ 12.6	2.2%
Dairy	3.7	.5	187	.5	2.3	.4
Field Crops	4.5	.6	144	.3	3.4	.6
Fruit	.8	.1	19	*	.3	.1
Forestry	2.7	.3	840	2.0	2.3	.4
All Other Agriculture	1.1	.1	58	.1	.4	.1
Coal	.6	.1	420	1.0	.3	.1
Oil and Gas	161.4	20.6	1,413	3.4	65.1	11.6
Uranium	49.1	6.2	484	1.2	13.3	2.4
All Other Mining	10.7	1.3	154	.4	4.1	.7
Food and Kindred	15.3	1.9	460	1.1	5.6	1.0
Lumber and Wood	6.4	.8	441	1.1	2.8	.5
Printing and Publishing	5.7	.7	429	1.0	2.8	.5
Stone, Clay and Glass	7.7	1.0	198	.5	2.2	.4
All Other Manufacturing	22.5	2.8	735	1.8	4.4	.8
Wholesale Trade	32.8	4.1	1,185	2.9	15.0	2.7
Service Stations	6.3	.8	895	2.2	3.8	.7
All Other Retail	72.6	9.1	6,094	15.2	39.1	6.9
Eating and Drinking	17.6	2.2	2,042	5.0	6.5	1.2
Agricultural Services	.9	.1	33	.1	.4	.1
Oil Field Services	16.9	2.1	420	1.0	5.3	.9
Lodging	15.9	2.0	2,315	5.6	6.9	1.2
All Other Services	36.5	4.6	1,995	4.8	19.8	3.5
Transportation	66.4	8.4	929	2.3	34.8	6.2
Electric Energy	26.4	3.3	1,237	3.0	7.9	1.4
Other Utilities	25.5	3.2	1,098	2.7	8.1	1.4
Contract Construction	102.0	12.8	5,135	12.5	29.1	5.2
Rentals and Finance	64.0	8.1	1,515	3.7	43.6	7.7
Households	----	----	5,284	12.8	149.5	26.4
Local Government	----	----	1,192	2.9	22.0	3.9
State and Federal Gov't.	----	----	1,135	2.8	43.3	7.7
Final Payments	----	----	-----	---	6.4	1.1
Total	\$793.9	100.0%	41,192	100.0%	\$563.4	100.0%

* Negligible

Also, as in the Upper Main Stem, Gross Regional Product will come more from the service and trade industries and less from the resource industries.

The New Role of Public Lands in the San Juan Sub-Basin

Economic activity associated with public lands in the sub-basin is expected to reach \$85.2 million in 1980. Major components of this are expenditures associated with recreation on public lands (\$40.1 million), and the extraction of leasable Oil and Gas from public lands--\$37.1 million of that industry's total output. The breakdown in table II-22 shows that of the \$40.1 million associated with public land recreation, \$16.5 million will be spent in Eating and Drinking establishments, \$7.9 million in Lodging, \$4.1 million in Service Stations, and \$10.3 million on Other Services. These amounts represent 93.5 percent, 49.9 percent, 64.8 percent, and 28.2 percent of those industries' outputs, respectively.

The sale of Federal grazing rights is projected to support \$5.5 million of Range Livestock total gross output, or 31 percent of that industry's total output. Sales of public Timber should support \$2.4 million of Forestry industry's total output (88 percent). The extraction of leasable Coal from public lands is expected to support 11.4 percent of the Coal industry's total output. The Coal industry's total output is projected to be only \$0.6 million, so this amount is negligible.

Economic activity associated with public land is projected to account for 10.7 percent of total economic activity. This is up slightly from 10.2 percent of the sub-basin's output in 1963.

Output Multipliers

In general, the expected 1980 output multipliers are not as high for the San Juan as for the Upper Main Stem. They range from a low of 1.16 in the Fruit sector to a high of 2.38 in Contract Construction. As in the Upper Main Stem, however, it is not possible to determine whether the output multipliers are higher or lower as between broad industry classes.

TABLE II-22

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LAND
(Thousands of 1963 Dollars at Producers' Prices)

SAN JUAN SUB-BASIN - 1980

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 17,866	\$5,538	31.0 %									\$ 5,538	31.0 %
Forestry	2,697			\$2,373	88.0 %							2,373	88.0
Oil and Gas	161,353					\$37,111	23.0 %					37,111	23.0
Coal	578							\$ 66	11.4 %			66	11.4
Eating & Drinking	17,602									\$16,458	93.5 %	16,458	93.5
Lodging	15,859									7,914	49.9	7,914	49.9
Other Retail	72,623									1,380	1.9	1,380	1.9
Service Stations	6,277									4,067	65.8	4,067	64.8
Services	36,486									10,289	28.2	10,289	28.2
All Other Sectors	462,468												
Total	\$793,809	\$5,538	.70%	\$2,373	.30%	\$37,111	4.67%	\$ 66	*	\$40,108+	5.05%	\$85,196	10.72%

* Negligible

+ 91.8% of Total Recreation Expenditures.

TABLE II-23

OUTPUT MULTIPLIERS - SAN JUAN SUB-BASIN, 1980
Total Change in Output Given a \$1 Change in the Industrial Sector Output

Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier
1. Range Livestock	\$ 1.98	11. Food and Kindred	\$ 2.10	20. Agriculture Services	\$ 1.60
2. Dairy	2.18	12. Lumber and Wood	2.19	21. Oil Field Services	1.57
3. Field Crops	1.93	13. Printing & Publishing	1.63	22. Lodging	1.75
4. Fruit	1.16	14. Stone, Clay & Glass	1.40	23. All Other Services	1.81
5. Forestry	1.84	15. All Other Manufacturing	1.57	24. Transportation	1.74
6. All Other Agriculture	1.92	16. Wholesale Trade	1.85	25. Electric Energy	1.82
7. Coal	1.71	17. Service Stations	2.10	26. Other Utilities	1.80
8. Oil and Gas	1.20	18. All Other Retail	2.10	27. Contract Construction	2.38
9. Uranium	1.85	19. Eating & Drinking Places	1.87	28. Rentals & Finance	1.90
10. All Other Mining	1.76				

The Green River Sub-Basin

Economy

In 1980, the Green River Sub-basin is projected to generate more than \$712.1 million in total output, \$477.9 million in value added, and employ almost 39.3 thousand people (table II-24). As in 1963, the sub-basin will be heavily dependent upon resource sectors, especially upon the production of Oil and Gas, Coal, Uranium and Non-fuels, and Agricultural products.

Mining industries will employ more than 5.3 thousand people, or 13.5 percent of the labor force. Agriculture is expected to employ more than 5,000. In terms of employment, Agriculture is almost as important as the Mining industries, although Agriculture is expected to have a total output of only \$57.8 million compared to more than \$260 million in the mining sectors. In terms of Gross Regional Product, the mining sectors will generate \$126.5 million as opposed to \$36.9 million in Agriculture.

Manufacturing is expected to remain relatively unimportant in terms of both total output and employment. Service and Trade will account for most of the remaining projected employment and income.

In terms of growth, the trade and service industries are expected to contribute the most. The resource sectors will contribute relatively less to the 1980 economy than they did to the 1963. The production of Uranium and Non-fuels should actually decrease. Thus, the trend in the Green River Sub-basin is not significantly different from those expected in the Upper Main Stem and San Juan Sub-basins.

The New Role of Public Lands in the Green Sub-Basin

Most important economic activity on public lands in 1980 is expected to be the extraction of leasable Oil and Gas. This is expected to reach \$122.3 million in 1980, 68.0 percent of the Oil and Gas industry's total output (table II-25). Second in importance will be the extraction of Coal from public lands, which will support \$57.1 million of the Coal industry's total output. Leasable Coal from

TABLE II-24

GREEN RIVER SUB-BASIN OUTPUT, EMPLOYMENT AND VALUE ADDED - 1980
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1980 Output	Percent Total 1980 Output	1980 Employment	Percent Total 1980 Employment	1980 Value Added	Percent Total 1980 Value Added
Agriculture	\$ 57.8	8.1%	5,275	13.3%	\$ 36.9	7.7%
Forestry	2.0	.3	581	1.5	1.7	.4
Oil and Gas	179.9	25.3	1,179	3.0	82.1	17.1
Coal	59.5	8.4	2,051	5.2	35.5	7.4
Uranium and Non-Fuels	22.9	3.2	1,090	5.3	8.9	1.9
Food and Kindred	10.6	1.5	370	.9	2.2	.5
Lumber and Wood	5.1	.7	415	1.1	1.8	.4
Printing and Publishing	1.5	.2	314	.8	.9	.2
Stone, Clay and Glass	1.9	.3	67	.2	1.0	.2
Chemicals, Petroleum, Coal, Other Manufacturing	2.9	.4	138	.4	.9	.2
Wholesale Trade	20.4	2.9	1,020	.3	11.3	2.4
Service Stations	7.7	1.1	1,324	3.4	4.3	.9
Eating and Drinking	20.3	2.9	2,169	5.5	4.8	1.0
Other Retail	73.4	10.3	5,238	13.1	29.8	6.2
Oil Field Services	21.4	3.0	404	1.0	2.2	.5
Lodging	25.0	3.5	3,128	8.0	7.2	1.5
Other Services	17.3	2.4	1,182	3.0	8.1	1.7
Transportation	34.5	4.8	2,332	5.9	18.7	3.9
Electric Energy	32.8	4.6	874	2.2	11.0	2.3
Other Utilities	16.7	2.3	418	1.1	3.5	.7
Contract Construction	47.8	6.7	1,568	4.0	11.3	2.3
Rentals and Finance	50.7	7.1	875	2.2	42.5	8.9
Households	----	---	4,902	12.5	66.7	14.0
Local Government	----	---	1,165	3.0	29.0	6.1
State and Federal Gov't.	----	---	1,219	3.1	32.1	6.7
Final Payments	----	---	-----	---	23.5	4.9
Total	\$712.1	100.0%	39,298	100.0%	\$477.9	100.0%

TABLE II-25

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO THE PUBLIC LANDS
(Thousands of 1963 Dollars at Producers' Prices)

GREEN RIVER SUB-BASIN - 1980

Sector	Total Output	Range Livestock		Forestry		Oil and Gas		Coal		Recreation		Total	
		Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.	Amt.	Pct.
Range Livestock	\$ 57,822	\$7,459	12.9 %									\$ 7,459	12.9 %
Forestry	2,022			\$1,889	93.4 %							1,889	93.4
Oil and Gas	179,922					\$122,347	68.0 %					122,347	68.0
Coal	59,514							\$57,074	95.9 %			57,074	95.9
Eating & Drinking	20,292									\$11,465	56.5 %	11,465	56.5
Lodging	24,961									6,465	25.9	6,465	25.9
Other Retail	73,350									1,100	1.5	1,100	1.5
Service Stations	7,689									2,968	38.6	2,968	38.6
Services	17,267									7,183	41.6	7,183	41.6
All Other Sectors	269,129												
Total	\$711,968	\$7,459	1.04%	\$1,889	.26%	\$122,347	17.13%	\$57,074	7.99%	\$29,181*	4.17%	\$217,950	30.51%

* 83.2% of Total Recreation Expenditures.

TABLE II-26

OUTPUT MULTIPLIERS - GREEN RIVER SUB-BASIN, 1980
The Total Change in Output Resulting from a \$1 Change in the Industrial Sector Output

Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier
1. Agriculture	\$ 1.95	12. Service Stations	\$ 2.37
2. Forestry	1.59	13. Eating and Drinking	1.72
3. Oil and Gas	1.17	14. Other Retail	1.75
4. Coal	1.58	15. Oil Field Service	1.08
5. Uranium, Non-Fuel	1.67	16. Lodging	1.51
6. Food and Kindred	2.36	17. Other Services	1.65
7. Lumber and Wood	2.18	18. Transportation	1.82
8. Printing and Publishing	1.69	19. Electric Energy	1.65
9. Stone, Clay and Glass	1.60	20. Other Utilities	1.48
10. Chemicals, Petroleum, Coal	1.79	21. Contract Construction	1.54
11. Wholesale Trade	1.62	22. Rentals and Finance	1.78

public lands is expected to support 95.9 percent of that industry's total output. All Mining on public lands should reach \$179.4 million in 1980.

Second in importance to the Green's economy will be expenditures associated with recreation on public lands; the projected expenditures are \$29.2 million. The Service industry should find significant portions of its total sales going to visitors on public lands. The sale of Federal grazing permits is expected to support \$7.5 million in Range Livestock, or 12.9 percent of that industry's total output. Public timber sales are projected to support \$1.9 million of the Forestry industry's total output, (93.4 percent).

Overall, public land outputs are expected to support 30.5 percent of the Green's 1980 total output. This is up slightly from its share of 1963.

Output Multipliers

The projected 1980 output multipliers for industries in the Green River Sub-basin are shown in table II-26. They tend to be a bit lower than those projected for the Upper Main Stem and San Juan Sub-basins. Indeed, here the lowest multiplier is 1.08 in Oil Field Services. The highest will be 2.37 in Service Stations.

Washington State

Economy

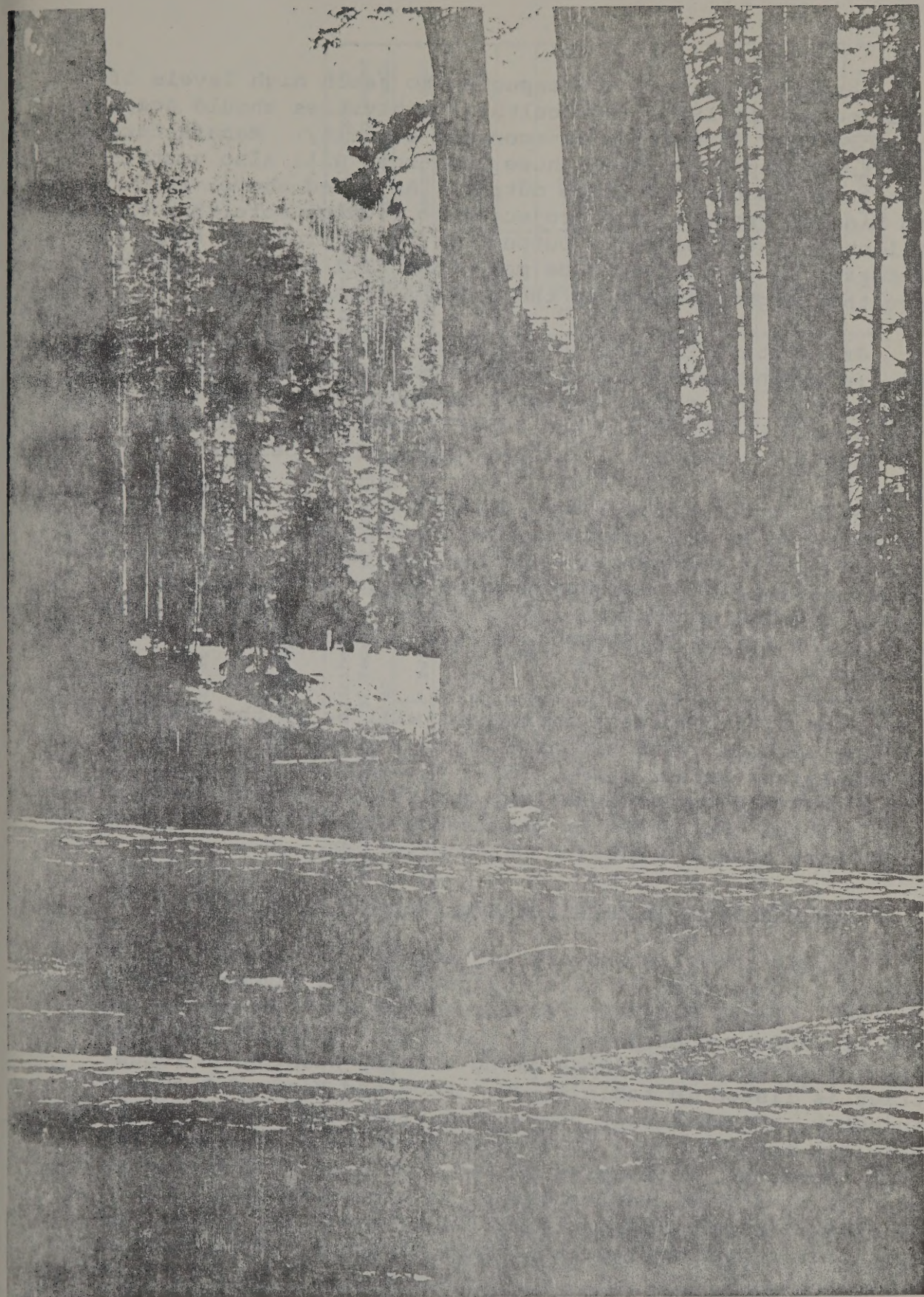
Total output in the State of Washington is expected to reach more than \$25.6 billion by 1980 (table II-27). The largest single source of total output will be the Aerospace industry, which has a projected total output of \$4,397 million. Among other manufacturing industries, Food and Kindred Products is projected to produce more than \$1.8 billion, Primary Metals are anticipated to produce close to \$1.4 billion, and Other Durable Manufacturing more than \$1.2 billion of total gross output. These manufacturing industries, with a combined total gross output of about \$8.6 billion, account for more than one-third of the state's total gross industrial output.

TABLE II-27

WASHINGTON STATE OUTPUT, EMPLOYMENT AND VALUE ADDED - 1980
(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1980 Output	Percent Total 1980 Output	1980 Employment	Percent Total 1980 Employment	1980 Value Added	Percent Total 1980 Value Added
Livestock and Products	\$ 398.6	1.6%	31,130	2.2%	\$ 133.7	.8%
Other Agriculture, Fishing, Mining	787.8	3.1	18,681	1.3	476.9	2.8
Food and Kindred Products	1,849.0	7.2	28,729	2.0	592.3	3.5
Timber	459.3	1.8	10,100	.7	273.8	1.6
Saw Mills	337.0	1.3	10,700	.7	152.6	.9
Plywood	253.0	1.0	8,500	.6	102.0	.6
Pulp, Paper, and Paperwood Mills	978.5	3.8	24,500	1.7	477.9	2.9
Other Wood	149.1	.6	8,400	.6	50.9	.3
Chemicals	659.8	2.6	8,855	.6	361.7	2.2
Petroleum Refining	515.0	2.0	1,333	.1	123.8	.7
Stone, Clay, Glass	263.5	1.0	7,531	.5	107.4	.6
Primary Metals	1,366.2	5.3	36,745	2.6	539.5	3.2
Aerospace	4,397.1	17.1	140,000	9.7	1,846.3	11.0
Other Non-Durable Manufacturing	493.0	1.9	28,975	2.0	278.9	1.7
Other Durable Manufacturing	1,276.4	5.0	39,871	2.8	628.2	3.8
Transportation, Communi- cation, and Public Utilities	2,248.1	8.8	47,654	3.3	1,125.3	6.7
Wholesale and Retail Trade	3,336.2	13.0	334,006	23.2	2,698.1	16.2
Services	3,240.7	12.6	351,348	24.5	2,357.6	14.1
Construction	2,653.6	10.3	106,307	7.4	1,091.0	6.5
Government	NA*	----	194,440	13.5	1,649.1	9.9
Households	NA	----	-----	----	1,675.0	10.0
Total	\$25,661.9	100.0%	1,437,805	100.0%	\$16,742.0	100.0%

*NA - Not Applicable



Resources sectors are expected to reach high levels of total output in 1980. Agricultural activities should account for more than \$1 billion in economic activity. Manufacturing industries dependent upon those resources will also contribute large amounts of total output. As noted above, Food and Kindred Products are projected to produce more than \$1.8 billion in total output. Output of forest products manufacturing is projected to be more than \$2.1 billion, slightly more than eight percent of the state's total output.

Gross State Product should reach \$16.7 billion by 1980. This is an increase of \$7.1 billion or 74 percent over the 1963 level. The three largest sources of Gross State Product should be Wholesale and Retail Trade (16.2 percent), Services (14.1 percent), and Aerospace (11.0 percent).

With such a large share of the state's total output concentrated in the manufacturing industries, manufacturing will provide a substantial share of the state's employment opportunities. The Aerospace industry is anticipated to employ 140,000 persons in 1980. Pulp, Paper and Paperboard Mills will employ 24.5 thousand, and Primary Metals, 36.7 thousand.

Most of the state's employment will be in the trade and service sectors, with anticipated employment of 334,000 in Wholesale and Retail Trade, 351.3 thousand in Services, 106.3 thousand in Construction, and 194.4 thousand in government. Total employment in Washington State is anticipated to be more than 1.4 million persons in 1980.

The New Role of Public Lands in Washington State

Public timber sales are anticipated to support \$137.8 million, 30 percent of total output, of the Timber industry in 1980. Total expenditures associated with recreation on public lands are projected to reach \$161 million. Allocation of these expenditures among various Washington industries is listed in table II-28. Food and Kindred Products industry, the Wholesale and Retail Trade industry, and the Services industry will find these recreation expenditures most important, with sales of \$48.7 million, \$32.6 million, and \$32.2 million, respectively, to recreationists. The Petroleum Refining industry will sell about 3.5 percent of its total output to recreationists visiting public lands.

TABLE II-28

ESTIMATES OF THE TOTAL OUTPUT OF SPECIFIED SECTORS, OCCURRING ON OR ATTRIBUTABLE TO PUBLIC LANDS

(Millions of 1962 Dollars at Producers' Prices)

WASHINGTON STATE - 1980

Sector	State Total Output	Output Attributed To Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Resident		Non-Resident		Amount	Percent
						Amount	Percent	Amount	Percent		
Livestock, and Products	\$ 398.6	\$ 1.9	.5%							\$ 1.9	.5%
Other Agriculture, Fishing, Mining	787.8					\$ 2.4	.3%	\$ 2.0	.3%	4.4	.6
Food and Kindred Products	1,849.0					27.2	1.5	21.5	1.2	48.7	2.6
Timber	459.3			\$137.8	30.0%					137.8	30.0
Petroleum Refining	515.0					10.1	2.0	8.0	1.6	18.1	3.5
Other Non-Durable Manufacturing	493.0					8.0	1.6	6.4	1.3	14.4	2.9
Other Durable Manufacturing	1,276.4					1.9	.1	1.3	.1	3.2	.3
Transportation, Communication, Public Utilities	2,248.1					4.0	.2	3.3	.1	7.3	.3
Wholesale and Retail Trade	3,336.2					18.3	.5	14.4	.4	32.6	1.0
Services	3,240.7					17.9	.5	14.3	.4	32.2	1.0
All Other Sectors	11,057.8					-	-	-	-	-	-
Total	\$25,661.9	\$ 1.9	*	\$137.8	.5%	\$89.8 ⁺	.3%	\$71.2 ⁺	.3%	\$300.6	1.2%

* Negligible

⁺ 26.7 percent of total recreation expenditures

No mining of leasable minerals is anticipated in 1980. The sale of Federal grazing permits is projected to support \$1.9 million, 0.5 percent, of the total output of that industry.

Total economic activity, taking place either directly on, or directly attributable to public lands, is projected to be \$300.6 million, or 1.2 percent of the state's total industrial output. This compares with 1.5 percent of Washington 1963 total output. Most of the decline represents the relative, though not absolute, decline in the importance of Federal timber. The relative importance of expenditures related to recreation on public lands is expected to increase slightly (from 0.5 to 0.6 percent).

Output Multipliers

The 1980 output multipliers for Washington State's 54 industries are shown in table II-29. Because Washington's economy is more interdependent and more self-sufficient than any of the three Upper Colorado River sub-basins, the total change in state output resulting from a one dollar change in the output of any one of the state's industries is likely to be significantly greater than the corresponding response in the Upper Colorado River Basin. Indeed, of the 54 output multipliers, only three are less than 2.0, while 23 are greater than 3.0. This compares with the Upper Main Stem Sub-basin where, for example, 12 of the 31 industry output multipliers were less than 2.0, while none was greater than 3.0.

As a result, the impact on output in Washington of a change in the sales of a Washington industry will almost certainly be greater than the impact on the Upper Colorado River Basin of a change in an Upper Colorado River Basin industry's sales.

Because of the high variation in multipliers between industries, it is not possible to determine whether the multipliers associated with one type of economic activity, say agriculture, are greater than those in another line of economic endeavor, perhaps manufacturing.

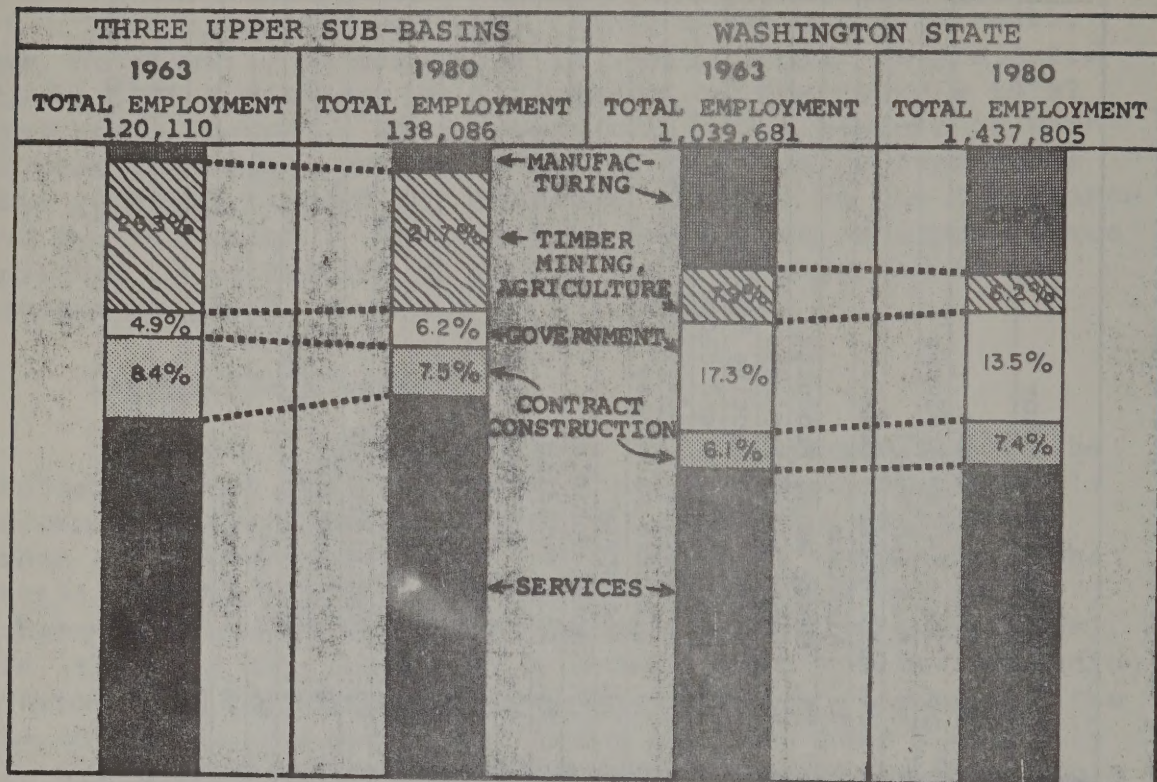
OUTPUT MULTIPLIERS - WASHINGTON STATE, 1980

The Total Change in Output Resulting From a \$1 Change in the Industrial Sector Output

Industrial Sector	Output Multiplier	Industrial Sector	Output Multiplier
1. Field Crops	\$ 2.63	28. Glass and Stone	\$ 3.02
2. Vegetables	3.10	29. Cement/Clay Products	3.19
3. Livestock/Products	2.54	30. Iron and Steel	3.03
4. Other Agriculture	2.88	31. Non-Ferrous Metals	2.28
5. Fishing	3.54	32. Aluminum	2.21
6. Meat Products	2.87	33. Heavy Metal Products	2.93
7. Dairy Products	3.59	34. Light Metal Products	2.08
8. Canning and Preserving	3.30	35. Non-Electric Motive Equipment	2.70
9. Grain Mills	2.33	36. Machine Tools and Shops	2.43
10. Beverages	3.25	37. Non-Electric Industrial Equipment	3.05
11. Other Foods	2.94	38. Electric Machinery	2.18
12. Textiles	2.34	39. Aerospace	2.01
13. Apparel	2.29	40. Motor Vehicles	2.94
14. Mining	2.69	41. Ship Building	1.86
15. Forestry	3.10	42. Other Manufacturing	3.01
16. Logging	3.56	43. Transportation	2.38
17. Saw Mills	3.44	44. Electric Companies	2.57
18. Plywood	2.89	45. Gas Companies	2.35
19. Other Wood	2.76	46. Water Services	1.94
20. Furniture and Fixtures	2.91	47. Communications	2.72
21. Pulp Mills	3.42	48. Constructions	2.72
22. Paper Mills	3.08	49. Wholesale/Retail Trade	3.21
23. Paperboard Mills	3.05	50. Finance	3.31
24. Printing/Publishing	2.90	51. Insurance	3.33
25. Industrial Chemicals	3.08	52. Real Estate	3.52
26. Other Chemicals	2.25	53. Business Services	3.06
27. Petroleum Refining	1.83	54. Personal Services	3.13

FIGURE II-6

AN EMPLOYMENT COMPARISON OF THE
UPPER THREE SUB-BASINS AND WASHINGTON STATE - 1963 AND 1980



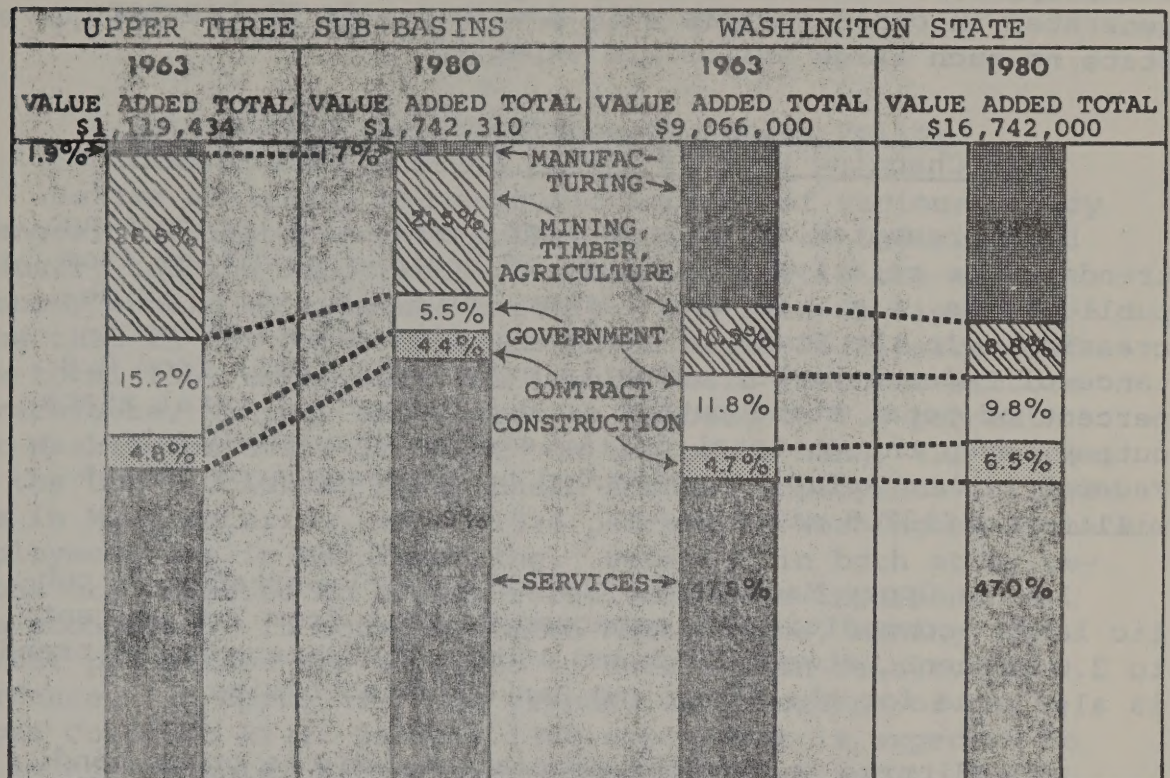
Comparing the Study Regions

It is important to observe that the Washington State economy is far more developed than any of the economies of the three Upper Colorado sub-basins. The most striking difference is that all three sub-basins are more heavily dependent upon the export of raw materials than Washington. Much of Washington's economic activity is devoted to the production and export of finished goods. In the next chapter the importance of a high degree of development and impacts of public policy changes is developed.

The Upper Colorado River Basin study regions are relatively more dependent upon basic resource activity, such as agriculture and mining, than is the State of Washington. The share of each region's labor force employed in each sector is shown in figure II-6. Similarly, the Gross Regional Product generated by each sector is shown in figure II-7.

FIGURE II-7

CHANGES IN VALUE ADDED (GROSS REGIONAL PRODUCT) BY SECTOR
1963 AND 1980



Comparing regions, it is interesting to note that 26.3 percent of the Upper Colorado River Basin's 1963 labor force, as opposed to 7.9 percent of Washington's, was employed in Agriculture, Mining and Timber. On the other hand, 19.4 percent of Washington's 1963 labor force, as opposed to 4.1 percent of the Upper Colorado River Basin's, was employed in Manufacturing. Services account for a large share of total employment in both regions, and those shares are expected to be even larger in 1980.

However, the relative importance of manufacturing is expected to rise in Washington, but fall in the Upper Colorado River Basin. The importance of Contract Construction will fall in the Upper Colorado River Basin, but will rise in Washington. The importance of raw materials should fall in both regions.

With regard to Gross Regional Product, the picture is quite the same. However, the sources of GRP in the Upper Colorado River Basin are expected to change significantly

while they should remain fairly stable in Washington. For example, Services are expected to generate 66.9 percent of the Upper Colorado River Basin's 1980 Gross Regional Product, up from 49.3 percent in 1963. The relative shares generated in other sectors will decrease. In Washington State no such large shifts are expected.

The Changing Role of Public Lands: 1963 to 1980

Data presented in this chapter reveal two interesting trends. The relative importance of basic commodities from public lands, e.g., forage, timber, minerals, etc., is decreasing. In the State of Washington the relative importance of Federal timber sales is expected to fall from 0.8 percent of total state output to 0.5 percent of total state output, even though total dollar amount attributable to Federal timber sales is projected to increase from \$104.6 million to \$137.8 million.

In the Upper Main Stem, the relative importance of public lands' commodities is expected to fall from 2.9 percent to 2.0 percent between 1963 and 1980. The same general trend is also true for the Green and San Juan sub-basins.

Expenditures on outdoor recreation, on the other hand, are expected to increase in importance in all four study regions in both total dollars spent, and as a percentage of total regional outputs. Total expenditures related to recreation on public lands in the State of Washington are projected to increase from \$68.1 million to \$161 million by 1980, from 0.5 to 0.6 percent of total state output. In the Upper Colorado River sub-basins, the trend is more pronounced. Expenditures in the Upper Main Stem attributable to recreation on Federal lands are projected to grow from 3.3 to 6.0 percent of the total sub-basin activity in 1980. In the San Juan Sub-basin, recreation expenditures are expected to account for 5.1 percent of total sub-basin activity in 1980, an increase from 2.2 percent in 1963. In the Green River Sub-basin, the increase is from 3.0 percent to 4.2 percent of total sub-basin activity.

The impact of public lands upon the economies of the study regions will depend more and more upon the availability of outdoor recreation sites and opportunities. In Chapter IV

the trends noted for the study regions in outdoor recreation are applied to the United States as a whole.

Determining the Importance of Public Policy

Before analyzing the economic impacts of various policy changes, the importance of public policy to an individual industry and the importance of public policy in the entire economy should be examined briefly. The data in figure II-6 show that in the Upper Colorado River Basin 26.3 percent of the total 1963 employment was in the basic resource sectors Agriculture, Mining, and Timber as opposed to 7.9 percent for Washington State in 1963. On the other hand, 4.1 percent of the Upper Colorado River Basin's total employment in 1963 was in Manufacturing, while 19.4 percent of Washington State's employment was in Manufacturing. Services in both study regions are expected to become relatively more important to the economies. In both economies Agriculture, Mining, and Timber production are expected to decrease in relative importance. In spite of these trends, 21.7 percent of the Upper Colorado River Basin's 1980 employment is expected to be in Agriculture, Mining, and Timber in contrast to 6.2 percent for Washington State in 1980.

A comparison of the importance of public lands in 1980 in the Upper Colorado River Basin and Washington State is presented in table II-30. It is interesting to note that public policy is not always the most important determinant of economic activity, even though public lands provide the largest percentage of an industry's output. This is easily demonstrated by comparing the importance of the sale of Federal timber for the Upper Colorado River Basin with the production of leasable oil and gas on Federal lands. Federal timber accounts for 91.3 percent of the total Forestry industry's output. Leasable oil and gas extracted from Federal lands accounts for only 46.9 percent of that industry's total output. However, the total output which Federal timber is supporting amounts to only \$7.7 million as opposed to \$160.4 million which is supported by leasable oil and gas from Federal lands. Thus, the role of the public lands is a function of both the level of activity on those lands and the relative importance of the resource sectors.

TABLE II-30

A COMPARISON OF THE IMPORTANCE OF PUBLIC LANDS IN THE UPPER THREE COLORADO RIVER SUB-BASIN AND WASHINGTON STATE, 1980
(Millions of 1963 Dollars at Producers' Prices)

UPPER COLORADO RIVER BASIN

STATE OF WASHINGTON

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Output Attributed to Oil and Gas on Federal Lands		Output Attributed to Coal of Federal Lands		Recreation Expenditures attributed to Federal Recreation Facilities		Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Range Livestock	\$ 106.5	\$21.0	19.8%									\$ 21.0	19.8%
Forestry	8.4			\$ 7.7	91.3%							7.7	91.3
Oil and Gas	342.3					\$160.40	46.9%					160.4	46.9
Coal								\$58.8	86.1%			58.8	86.1
Eating and Drinking	67.1									\$ 48.7	72.7%	48.7	72.7
Lodging	58.3									24.7	42.4	24.7	42.4
Other Retail	236.8									4.6	1.9	4.6	1.9
Service Stations	22.7									12.3	54.2	12.3	54.2
Services	100.7									30.4	20.7	30.4	20.7
All Other Sectors	1,356.7									-	-	-	-
Total	\$2,367.8	\$21.0	.9%	\$ 7.7	.3%	\$160.4	6.8%	\$58.8	2.5%	\$120.7	5.1%	\$368.6	15.6%

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Resident		Non-Resident		Amount	Percent
Livestock and Products	\$ 398.5	\$ 1.9	.5%							\$ 1.9	.5%
Other Agriculture, Mining Fishing	787.8					\$ 2.4	.3%	\$ 2.0	.3%	4.4	.6
Food and Kindred Products	1,849.0					27.2	1.5	21.5	1.2	48.7	2.6
Timber	459.3			\$137.8	30.0%					137.8	30.0
Petroleum Refining	515.0					10.1	2.0	8.0	1.6	18.1	3.6
Other Non-Durable Manufacturing	493.0					8.0	1.6	6.4	1.3	14.4	2.9
Other Durable Manufacturing	1,276.4					1.9	.1	1.3	.1	3.2	.3
Transportation, Communication, Public Utilities	2,248.1					4.0	.2	3.3	.1	7.3	.3
Wholesale and Retail Trade	3,336.2					18.3	.5	14.4	.4	32.6	1.0
Services	3,240.7					17.9	.5	14.3	.4	32.2	1.0
All Other Sectors	11,057.8					-	-	-	-	-	-

the trends noted for the study regions in outdoor recreation are applied to the United States as a whole.

Determining the Importance of Public Policy

Before analyzing the economic impacts of various policy changes, the importance of public policy to an individual industry and the importance of public policy in the entire economy should be examined briefly. The data in figure II-6 show that in the Upper Colorado River Basin 26.3 percent of the total 1963 employment was in the basic resource sectors Agriculture, Mining, and Timber as opposed to 7.9 percent for Washington State in 1963. On the other hand, 4.1 percent of the Upper Colorado River Basin's total employment in 1963 was in Manufacturing, while 19.4 percent of Washington State's employment was in Manufacturing. Services in both study regions are expected to become relatively more important to the economies. In both economies Agriculture, Mining, and Timber production are expected to decrease in relative importance. In spite of these trends, 21.7 percent of the Upper Colorado River Basin's 1980 employment is expected to be in Agriculture, Mining, and Timber in contrast to 6.2 percent for Washington State in 1980.

A comparison of the importance of public lands in 1980 in the Upper Colorado River Basin and Washington State is presented in table II-30. It is interesting to note that public policy is not always the most important determinant of economic activity, even though public lands provide the largest percentage of an industry's output. This is easily demonstrated by comparing the importance of the sale of Federal timber for the Upper Colorado River Basin with the production of leasable oil and gas on Federal lands. Federal timber accounts for 91.3 percent of the total Forestry industry's output. Leasable oil and gas extracted from Federal lands accounts for only 46.9 percent of that industry's total output. However, the total output which Federal timber is supporting amounts to only \$7.7 million as opposed to \$160.4 million which is supported by leasable oil and gas from Federal lands. Thus, the role of the public lands is a function of both the level of activity on those lands and the relative importance of the resource sectors.

TABLE II-30

A COMPARISON OF THE IMPORTANCE OF PUBLIC LANDS IN THE UPPER THREE COLORADO RIVER SUB-BASIN AND WASHINGTON STATE, 1980
(Millions of 1963 Dollars at Producers' Prices)

□ UPPER COLORADO RIVER BASIN

■ STATE OF WASHINGTON

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Output Attributed to Oil and Gas on Federal Lands		Output Attributed to Coal of Federal Lands		Recreation Expenditures attributed to Federal Recreation Facilities		Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Range Livestock	\$ 106.5	\$21.0	19.8%									\$ 21.0	19.8%
Forestry	8.4			\$ 7.7	91.3%							7.7	91.3
Oil and Gas	342.3					\$160.40	46.9%					160.4	46.9
Coal								\$58.8	86.1%			58.8	86.1
Eating and Drinking	67.1									\$ 48.7	72.7%	48.7	72.7
Lodging	58.3									24.7	42.4	24.7	42.4
Other Retail	236.8									4.6	1.9	4.6	1.9
Service Stations	22.7									12.3	54.2	12.3	54.2
Services	100.7									30.4	20.7	30.4	20.7
All Other Sectors	1,356.7									-	-	-	-
Total	\$2,367.8	\$21.0	.9%	\$ 7.7	.3%	\$160.4	6.8%	\$58.8	2.5%	\$120.7	5.1%	\$368.6	15.6%

Sector	Total Output	Output Attributed to Sale of Federal Grazing Permits		Output Attributed to Sale of Federal Timber		Recreation Expenditures Attributed to Federal Recreation Facilities				Total Output or Sales Attributed to Federal Lands	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Livestock and Products	\$ 398.6	\$ 1.9	.5%							\$ 1.9	.5%
Other Agriculture, Mining Fishing	787.8					\$ 2.4	.3%	\$ 2.0	.3%	4.4	.6
Food and Kindred Products	1,849.0					27.2	1.5	21.5	1.2	48.7	2.6
Timber	459.3			\$137.8	30.0%					137.8	30.0
Petroleum Refining	525.0					10.1	2.0	8.0	1.6	18.1	3.6
Other Non-Durable Manufacturing	493.0					8.0	1.6	6.4	1.3	14.4	2.9
Other Durable Manufacturing	1,276.4					1.9	.1	1.3	.1	3.2	.3
Transportation, Communication, Public Utilities	2,248.1					4.0	.2	3.3	.1	7.3	.3
Wholesale and Retail Trade	3,336.2					18.3	.5	14.4	.4	32.6	1.0
Services	3,240.7					17.9	.5	14.3	.4	32.2	1.0
All Other Sectors	11,057.8					-	-	-	-	-	-

Relative and Absolute Importance of Public Lands

It is also useful to compare the relative and absolute importance of public policy to the timber industry between the two regions. In the Upper Colorado River Basin, public timber accounts for 91.3 percent of the Forest industry's total output. In Washington State, Federal timber supplies only 30 percent of the Timber industry's total output. However, in Washington State the 1980 total dollar output of the Timber industry supported by Federal timber is anticipated to be \$137.8 million (30 percent) as opposed to an expected \$7.7 million (91 percent) for the Upper Colorado River Basin.

While Federal timber is relatively less important to Washington State's Timber industry than to the Upper Colorado River Basin's Forestry industry, public policy can be expected to have a much greater impact in the State of Washington than in the Upper Colorado River Basin. These comparisons are important to public decision-makers who partially determine both the relative and absolute importance of public lands to the regional economy.

REPORT ON THE PROGRESS OF THE WORK DURING THE YEAR 1900

It is a pleasure to report that the work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction. The work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction. The work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction.

The work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction. The work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction. The work of the year has been most successful. The progress made in the various departments has been such as to give every one concerned a feeling of satisfaction.

CHAPTER III

THE ECONOMIC IMPACT OF CHANGES IN PUBLIC POLICY

The Public Land Law Review Commission has specified a number of hypothetical alternative public policies. Nine were specified for the Upper Colorado River Basin, and five for the State of Washington.^{1/} The purpose of these illustrative alternatives was to permit the estimation of the total adjustment burden resulting from simulated policy changes. The impact of each alternative is measured in terms of the 1980 levels of economic activity in each region. As far as the present study is concerned, the proposed policies are hypothetical and used for analytical purposes only. Their feasibility is not an issue.

For the most part, proposed policy alternatives lead to changes in supplies of various resources provided from public lands. For example, a change might be made in the number of recreation sites, timber cut, grazing rights sold, etc. In addition, two of the policy alternatives specified for the Upper Colorado River Basin concern problems of general economic development, rather than specific public policy considerations. In one case, the effects of the development of an oil shale industry is considered. In the second, the effects of the development of a pulp and paper industry is considered. In both cases, these would be new industries, dependent upon public land resources.

The general format for analyzing the alternatives specified by the PLLRC staff was discussed in Chapter I. The alternative is first stated. The second step is to determine the immediate effects the alternative might have. That is, what industries are directly affected by the change in public policy. Using input-output analysis, estimates are then made of the total indirect and induced

^{1/} See Appendix E for a complete listing of these policy alternatives.

impacts on the economy. Indirect and induced impacts are not separated because of the technique employed to estimate the impact of public policy changes.

Determining the immediate effects of a change in public policy requires varying degrees of economic analysis. An effort is made in the following sections to present all auxiliary information and analyses required to understand any immediate effects.

In the discussion of input-output in Chapter I, it was noted that a change in industrial output can have both a forward-linked impact and a backward-linked impact. The backward-linked impact, which is equivalent to the direct and indirect input requirements necessary to meet a given level of sales to final markets, is a standard input-output solution. The forward-linked impact, or supply impact, is the effect on industrial output in the economy resulting from a change in the supply of some input, to other industries' production processes. In most of the analyses of public policy alternatives in the following sections, consideration of forward-linked impacts was not necessary. Consequently, the impacts of most public policy changes would be to the demand for backward-linked inputs. If there is a possibility of a forward-linked impact, the analysis of the policy alternative is so designated.

To analyze some of the policy changes, a technique which is slightly different from that used in standard input-output analysis is used to estimate direct and indirect and induced impacts. Rather than determining new levels of final demand (the standard technique), a new level of total output is determined, and the I-O matrix is solved for the new level of feasible final demand. This methodology is explained in detail in Appendix B. The main reason for this adjustment is that supplies of resources cannot always be expanded indefinitely or even over short ranges--a condition that must be met if input-output analysis is to be approached singularly from the final demand side.

Since the quantities of resources are often limited, the total output of the industry (industries) involved in extracting and processing additional resources may be similarly limited. In turn, the industries using those

resources in the production of other commodities are similarly constrained by the scarcity of that resource.

Not all policy alternatives apply to all three sub-basins, or to Washington. In addition to stating the policy in each case, the affected area is also designated. All adjustment burdens are estimated as changes in the level of economic activity in 1980.

Public Policy Alternatives Concerning the Upper Colorado River Basin

Colorado Policy Alternative A

The Federal government will adopt a policy of substantially increased investment in range land. Increased investment will increase the carrying capacity of affected range lands by 50 percent. Increased carrying capacity will be used by the same proportion of cattle and sheep as was projected for 1980. This policy applies to all three sub-basins.

Impact on the Upper Main Stem Sub-Basin

In 1980 Federal grazing permits are estimated to supply 784,500 animal unit months (a.u.m.) of the 2,922,500 a.u.m. to be consumed in the Upper Main Stem.^{2/} An increase of 392,250 a.u.m. in the Federal supply of forage is indicated by this policy alternative. Part of this increase is assumed to come from lengthening the grazing season. This move would have the effect of easing pressures on private feed supplies. The remainder would come from more intensive use of the lands by grazing more animals per acre during the extended season. This change increases the pressure on the private supply of feed, since an increased number of animals must be fed during the off season.

The Forest Service, which supplies 49 percent of the public supply, could increase its season by no more than ten percent. This means an increase of 38,400 a.u.m. The Bureau of Land Management, which supplies the remaining 51

^{2/} See Appendix A, table A-3.

percent of the public feed supply, could possibly increase its season by 25 percent. This is an additional 100,000 a.u.m. Because of the increased season, the public would assume a greater portion of the total feed supply in the Upper Main Stem. Rather than supplying 26 percent of the total, as was originally anticipated, the public would be supplying 30 percent.

The rest of the increase in the public feed supply will come from increasing the animal intensity of the existing land over the extended season. This increase amounts to 253,800 a.u.m. To support this increase, the private sector must provide an additional 586,600 a.u.m. to graze additional animals when they are not on public lands. This private increase, added to the public increase, amounts to 978,800 a.u.m., an increase of 33.5 percent over the original total of 2,922,500 a.u.m.

In the absence of additional private resource development, an increase in the private supply of livestock feed would require cutbacks in other sectors. The most likely sectors facing a cutback would be the Dairy, and Food and Field Crops industries. Estimates of immediate output changes in the Upper Main Stem are:

<u>Industry</u>	<u>Original Total Output</u>	<u>Output Under Policy Alternative A</u>	<u>Change in Total Output</u>
Range Livestock	\$30,083,000	\$39,713,000	+\$9,630,000
Dairy	2,577,000	1,735,000	- 842,000
Food & Field Crops	6,884,000	4,767,000	- 2,117,000

The total adjustment burden which this policy alternative would place on the economy of the Upper Main Stem is shown in table III-1.

Given the structure of the economy of the area, if this policy alternative is to be fully absorbed, employment in Range Livestock would have to increase by 1,692 persons. Employment in the Dairy industry would decrease by 51 persons, while employment in the Food and Field Crops industries would fall by 121.

TABLE III-1

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF
COLORADO POLICY A, INCREASED RANGE LAND INVESTMENT, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	1,692	\$ 6,256	\$ 9,630	\$ 30,083	32.01 %
Feeder Livestock	0	5	138	26,882	.51
Dairy	-51	-463	-842	2,577	-32.69
Food and Field Crops	-121	-1,330	-2,117	6,884	-30.75
Truck Crops	1	1	4	1,210	.29
Fruit	0	20	51	9,451	.54
Forestry	2	5	6	3,658	.15
Other Agriculture	3	8	24	2,409	.98
Coal	2	22	34	8,177	.42
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	0	6	9	8,883	.10
Food and Kindred	15	202	544	34,794	1.56
Lumber and Wood	1	5	14	6,229	.23
Printing & Publishing	9	40	80	7,366	1.06
Fabricated Metals	0	1	2	2,570	.07
Stone, Clay and Glass	0	5	14	2,832	.49
Other Manufacturing	3	24	82	18,253	.45
Wholesale Trade	14	115	262	42,724	.61
Service Stations	12	63	88	8,722	1.01
Other Retail	97	575	1,004	90,788	1.11
Eating and Drinking	10	64	179	29,191	.61
Agricultural Services	1	8	16	6,829	.24
Lodging	2	7	14	17,471	.08
Other Services	19	118	289	46,897	.62
Transportation	10	174	335	64,180	.52
Electric Energy	5	85	163	15,205	1.07
Other Utilities	7	115	232	29,997	.77
Contract Construction	9	86	346	143,811	.24
Rentals and Finance	32	981	1,168	87,678	1.33
Households	116	1,901	-	-	-
Local Government	20	520	-	-	-
Total	1,916	\$ 9,620	\$10,769	\$ 862,010	1.25 %
Original 1980 Base	57,596	\$ 700,877			
Percent Change	3.33 %	1.37 %			

Because of the indirect and induced impact of the policy change, output, employment, and value added adjustments would be required in other industries as well. Employment in the Food and Kindred Products industry would have to rise by 15. Employment in other Retail Trade would have to increase by 97, 16 new positions would be available in Eating and Drinking establishments, and so on. The total employment adjustment burden of this policy change would be a required increase of 1,916 in total sub-basin employment. This represents an increase of slightly more than 3.3 percent of total employment. Value added payments would be up \$9,620 or slightly less than 1.4 percent of total sub-basin value added. The net effect of this policy alternative would be to decrease slightly per capita income in the sub-basin.

Impact on the San Juan Sub-Basin

The methodology used to estimate the immediate effects of the proposed policy alternative on the San Juan is essentially the same as in the Upper Main Stem. The net effect would be a longer grazing season and more intensive use of both private and public lands. If the Range Livestock industry is divided into production of cattle and sheep, and the production of other livestock, the effect of this policy would be to increase cattle and sheep sales by \$1,647,900, and to decrease other livestock sales by \$204,400. These changes imply a net increase in the output of the Range Livestock industry of \$1,444,000.

As in the Upper Main Stem, the output of the Dairy and Field Crops industries would have to fall by \$40,000 and \$60,000, respectively. The total, and detailed adjustment burden, for the San Juan's economy is shown in table III-2.

If this policy alternative is to be fully assimilated into the San Juan Sub-basin, employment in the Range Livestock industry would have to increase by 202 persons. Employment in the Dairy and Field Crops industries would fall slightly. The overall impact would not be quite as great in the San Juan as in the Upper Main Stem. Employment would increase by a total of 290, about 0.7 percent of total sub-basin employment. Value added in the region would increase by \$2,272,000, about 0.4 percent of total sub-basin value added. Per capita income in the San Juan Sub-basin would also be decreased slightly.

TABLE III-2

THE ADJUSTMENT BURDEN ON THE SAN JUAN SUB-BASIN OF
COLORADO POLICY A, INCREASED RANGE LAND INVESTMENT, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	202	\$ 1,014	\$ 1,444	\$ 17,866	8.08 %
Dairy	-2	-25	-40	3,710	-1.08
Food and Field Crops	-2	-46	-60	4,477	-1.34
Fruit	0	0	0	812	.05
Forestry	1	1	2	2,697	.06
Other Agriculture	0	1	2	1,096	.18
Coal	1	1	2	578	.33
Oil and Gas	0	11	28	161,353	.02
Uranium	0	0	0	49,066	0
Other Mining	0	1	3	10,714	.03
Food and Kindred	1	18	49	15,271	.32
Lumber and Wood	0	2	5	6,416	.08
Printing & Publishing	2	10	20	5,716	.35
Stone, Clay and Glass	0	2	7	7,677	.09
Other Manufacturing	1	6	28	22,508	.13
Wholesale Trade	1	18	40	32,834	.12
Service Stations	3	12	19	6,277	.31
Other Retail	18	117	217	72,623	.30
Eating and Drinking	3	11	30	17,602	.17
Agricultural Services	1	12	29	919	3.11
Oil Field Services	0	0	1	16,906	0
Lodging	8	2	6	15,859	.04
Other Services	5	51	94	36,486	.26
Transportation	2	70	134	66,405	.20
Electric Energy	4	23	76	26,406	.29
Other Utilities	3	22	70	25,457	.28
Contract Construction	3	19	65	101,987	.06
Rentals and Finance	5	130	191	64,036	.30
Households	24	683	-	-	-
Local Government	6	106	-	-	-
Total	290	\$ 2,272	\$ 2,461	\$ 793,809	.31 %
Original 1980 Base	41,192	\$563,474			
Percent Change	.70 %	.40 %			

Impact on the Green River Sub-Basin

In the Green Sub-basin there is only one agricultural sector. Consequently, all direct changes are internal to that sector. The output change would be composed of:

Cattle	+\$1,803,200
Sheep	+ 2,178,600
Crops Foregone to Allow Sufficient Feed from Private Sector	<u>- 1,001,000</u>
Net Increase	+\$2,980,800

The total adjustment burden the policy change would have on the Green's economy is indicated in table III-3.

As indicated, employment in the agricultural industry would increase by 272. Elsewhere in the economy employment in Other Retail would be up 30, and Households 43. Small increases would occur in a number of other industries.

Total adjustment burden would require an increase of 418 in total sub-basin employment, about one percent of total employment. Value added would increase by \$3,528,000, slightly more than 0.7 percent of total sub-basin value added. As in the other two sub-basins, a slight decrease in per capita income would occur in the Green Sub-basin.

Colorado Policy Alternative B

The level of investment in grazing lands under the jurisdiction of the Department of the Interior will be increased. The 1963 level of grazing is to be maintained on lands under the Department of Agriculture. Total USDI grazing will increase 25 percent. This policy would be applied to all three sub-basins.

Impact on the Upper Main Stem Sub-Basin

This policy implies an increase of 100,000 a.u.m. on grazing lands administered by the BLM. The increase would be achieved by increasing the season. No increase in the

TABLE III-3

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF
COLORADO POLICY A, INCREASED RANGE LAND INVESTMENTS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

<u>Sector</u>	<u>Change In Employment</u>	<u>Change In Value Added</u>	<u>Change In Output</u>	<u>Original 1980 Output Projections</u>	<u>Percent Output Change</u>
Agriculture	272	\$ 1,902	\$ 2,980	\$ 57,822	5.15%
Forestry	1	2	2	2,022	.10
Oil and Gas	0	25	53	179,922	.03
Coal	3	47	79	59,514	.13
Uranium and Non-Fuels	0	3	8	22,864	.04
Food and Kindred	3	16	80	10,557	.76
Lumber and Wood	0	2	5	5,133	.10
Printing & Publishing	2	4	7	1,474	.50
Stone, Clay and Glass	0	2	3	1,918	.16
Chemicals, Petroleum & Coal	1	5	18	2,914	.61
Wholesale Trade	3	30	53	20,372	.26
Service Stations	5	16	28	7,689	.36
Eating and Drinking	9	19	82	20,292	.40
Other Retail	30	170	418	73,350	.57
Oil Field Services	0	0	1	21,430	.00
Lodging	2	4	14	24,961	.05
Other Services	14	98	209	17,267	1.21
Transportation	11	90	165	34,529	.48
Electric Energy	3	35	104	32,796	.32
Other Utilities	2	13	63	16,664	.38
Contract Construction	1	8	32	47,813	.07
Rentals and Finance	5	233	279	50,665	.55
Households	43	592	-	-	-
Local Government	8	212	-	-	-
Total	418	\$ 3,528	\$ 4,683	\$ 711,968	.66 %
Original 1980 Base	39,298	\$477,888			
Percent Change	1.06%	.74%			

private feed supply would be required. Output of the Livestock industry would be expected to increase by 3.4 percent. The total adjustment burden of an increase of this magnitude is indicated in table III-4.

The greatest impact of this policy alternative would be upon the Range Livestock industry itself. The policy change would require an increase in employment in that industry of 180. Because of increased demand for inputs and increased income in Range Livestock, employment, value added, and output would also increase in other industries. Employment in Other Retail would increase by 15, employment in Households by 18.

The overall impact upon employment would be an increase of 241, or 0.4 percent of total employment. Value added payments would be up by \$1,472,000, or slightly more than 0.2 percent of total sub-basin value added. As shown in table III-4, almost three-fourths of the employment increase would occur in the Range Livestock industry.

Impact on the San Juan Sub-Basin

Additional output from Livestock sales is assumed to be distributed as follows:

Cattle	+\$410,032
Sheep	<u>+ 143,260</u>
Total	+\$553,292

As with Alternative A in the San Juan, a slight decrease in livestock sales other than cattle or sheep would be required, and a decrease would occur in total output of Dairy and Field Crops industries. These decreases would be:

Range Livestock*	-\$109,500
Dairy	- 20,000
Field Crops	<u>- 30,000</u>
Total	-\$159,500

(*) Other than cattle and sheep.

TABLE III-4

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF
COLORADO POLICY B, INCREASED INVESTMENT IN USDI GRAZING LANDS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	180	\$ 664	\$1,022	\$ 30,083	3.40 %
Feeder Livestock	0	0	12	26,882	.04
Dairy	0	3	5	2,577	.21
Food and Field Crops	0	2	3	6,884	.05
Truck Crops	0	0	0	1,210	0
Fruit	0	3	7	9,451	.07
Forestry	0	1	1	3,658	.02
Other Agriculture	0	1	3	2,409	.11
Coal	0	4	5	8,177	.07
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	0	0	0	8,883	0
Food and Kindred	1	17	316	34,794	.91
Lumber and Wood	0	1	2	6,229	.03
Printing & Publishing	1	6	12	7,366	.16
Fabricated Metals	0	0	0	2,570	0
Stone, Clay and Glass	0	1	2	2,832	.07
Other Manufacturing	1	10	34	18,253	.19
Wholesale Trade	2	18	41	42,724	.10
Service Stations	2	13	18	8,722	.20
Other Retail	15	89	154	90,788	.17
Eating and Drinking	2	10	28	29,191	.10
Agricultural Services	2	15	30	6,829	.44
Lodging	1	2	3	17,471	.02
Other Services	3	19	47	46,897	.10
Transportation	2	32	61	64,180	.10
Electric Energy	1	14	27	15,205	.18
Other Utilities	1	17	34	29,997	.11
Contract Construction	1	13	53	143,811	.04
Rentals and Finance	5	144	172	87,678	.20
Households	18	293	-	-	-
Local Government	3	80	-	-	-
Total	241	\$1,472	\$2,092	\$862,010	.24 %
Original 1980 Base	57,596	\$ 700,877			
Percent Change	.42 %	.21 %			

Revised projected outputs for these industries would be:

Range Livestock	\$18,309,800
Dairy	3,690,000
Field Crops	4,447,000

Total estimated impact of Policy B on the San Juan economy is indicated in table III-5.

The increase in Range Livestock output would increase employment in that industry by 62 persons. A decrease in the output of Dairy and Field Crops industries would have negligible effects on employment in those industries. Because of the indirect and induced impacts, there would be slight increases in employment in Service Stations, Other Retail, Eating and Drinking establishments, etc.

The total adjustment burden imposed by the Policy B alternative would be to increase employment by 83 in the sub-basin. This represents an increase of 0.21 percent in total employment. Total value added payments would be increased by \$677,000, 0.13 percent of total value added in the sub-basin.

Impact on the Green River Sub-Basin

A 25 percent increase in the BLM's supply of feed in the Green River Sub-basin could be achieved by an increase in the grazing season. The change in agricultural output can be summarized as:

Cattle	+\$ 624,300
Sheep	+ 871,500
Other Agriculture	- 386,300
Net Change	\$1,109,300

The immediate effect of Policy B would be to increase agricultural output and employment. Total and detailed adjustment estimates on the Green's economy are shown in table III-6.

Full assimilation of the Policy B alternative would lead to increased employment in the agricultural sector by 101. An increase of value added payments of \$708,000 would occur in Agriculture.

TABLE III-5

THE ADJUSTMENT BURDEN ON THE SAN JUAN SUB-BASIN OF
COLORADO POLICY B, INCREASED INVESTMENT IN USDI GRAZING LANDS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	62	\$ 312	\$ 444	\$ 17,866	2.49 %
Dairy	-1	-12	-20	3,710	-.54
Food and Field Crops	-1	-24	-30	4,477	-.67
Fruit	0	0	0	812	0
Forestry	0	0	1	2,697	.02
Other Agriculture	0	0	1	1,096	.05
Coal	0	0	10	578	.17
Oil and Gas	0	4	10	161,353	.01
Uranium	0	0	0	49,066	0
Other Mining	0	0	1	10,714	.01
Food and Kindred	0	4	12	15,271	.08
Lumber and Wood	0	1	1	6,416	.02
Printing & Publishing	0	3	7	5,716	.12
Stone, Clay and Glass	0	1	2	7,677	.03
Other Manufacturing	0	1	7	22,508	.03
Wholesale Trade	0	5	11	32,834	.03
Service Stations	1	3	4	6,277	.07
Other Retail	5	34	63	72,623	.09
Eating and Drinking	1	3	8	17,602	.05
Agricultural Service	0	4	8	919	.91
Oil Field Services	0	0	0	16,906	0
Lodging	0	1	2	15,859	.01
Other Services	2	16	29	36,486	.08
Transportation	1	24	45	66,405	.07
Electric Energy	1	7	23	26,406	.09
Other Utilities	1	7	22	25,457	.08
Contract Construction	1	6	21	101,987	.02
Rentals and Finance	1	43	64	64,036	.10
Households	7	202	-	-	-
Local Government	2	32	-	-	-
Total	83	\$ 677	\$ 746	\$793,809	.09%
Original 1980 Base	41,192	\$563,474			
Percent Change	.20%	.12%			

TABLE III-6

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF
COLORADO POLICY B, INCREASED INVESTMENTS IN USDI GRAZING LANDS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

<u>Sector</u>	<u>Change In Employment</u>	<u>Change In Value Added</u>	<u>Change In Output</u>	<u>Original 1980 Output Projections</u>	<u>Percent Output Change</u>
Agriculture	101	\$ 708	\$1,109	\$ 57,822	1.92 %
Forestry	0	1	1	2,022	.04
Oil and Gas	0	9	20	179,922	.01
Coal	1	18	30	59,514	.05
Uranium and Non-Fuels	0	1	3	22,864	.01
Food and Kindred	1	6	30	10,557	.28
Lumber and Wood	0	1	2	5,133	.04
Printing & Publishing	1	2	3	1,474	.19
Stone, Clay and Glass	0	0	1	1,918	.06
Chemicals, Petroleum & Coal	0	2	7	2,914	.23
Wholesale Trade	1	11	20	20,372	.10
Service Stations	2	6	10	7,689	.14
Eating and Drinking	3	7	31	20,242	.15
Other Retail	11	63	156	73,350	.21
Oil Field Services	0	0	0	21,430	0
Lodging	1	2	6	24,961	.02
Other Services	5	36	78	17,267	.45
Transportation	4	33	62	34,529	.18
Electric Energy	1	13	39	32,796	.12
Other Utilities	1	5	4	16,664	.14
Contract Construction	0	3	12	47,813	.03
Rentals and Finance	2	87	104	50,665	.21
Households	16	220	-	-	-
Local Government	3	79	-	-	-
<hr/>					
Total	154	\$1,314	\$1,738	\$711,968	.24 %
Original 1980 Base	39,298	\$477,888			
Percent Change	.39 %	.27 %			

Because of indirect and induced effects of increased employment and output in the agricultural industry, employment elsewhere in the economy would increase by an additional 53 persons, for a total increase in sub-basin employment of 154. Total value added payments in the sub-basin would be increased by \$1,314,000, or 0.27 percent of total sub-basin value added. Total sub-basin employment would be increased by approximately 1.5 times the increase in employment in the agricultural industry.

Colorado Alternative C

This alternative would result in the development of a new shale oil industry in the Upper Main Stem Sub-basin. Output of this industry is assumed to be 250,000 barrels per day.

Impact on the Upper Main Stem Sub-Basin

To evaluate this alternative it was necessary to modify the input-output tables of the Upper Main Stem by adding a set of row and column coefficients to describe the new shale oil industry. Appendix D of An Interindustry Analysis of the Colorado River Basin^{3/} describes the procedure for inserting a shale oil industry into the input-output table for the Upper Main Stem. The model coefficients were, at best, crude estimates because of the limited amount of information available.^{4/} The impact estimates derived here are subject to these same qualifications.

The adjustments of the Upper Main Stem economy required by an oil shale industry of the size proposed are shown in table III-7. The oil shale industry alone would employ more than 3,500 persons. The development of this industry would also have substantial effects upon Other Services, Transportation, Electric Utilities, Other Utilities, Construction, Rentals, Finance, and Household industries. Total increase in employment expected to result would be 6,353 persons, an increase of 11.0 percent in total sub-basin employment.

3/ Bernard Udis, editor, An Interindustry Analysis of the Colorado Sub-Basin in 1960 with Projections to 1980 and 2010, (Boulder: Bureau of Economic Research, University of Colorado, June, 1968) Appendix, Part II, Oil Shale, Appendix D.

4/ Ibid., p. 1.

TABLE III-7

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO POLICY C,
OIL SHALE INDUSTRY IN THE UPPER MAIN STEM SUB-BASIN, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	3	\$ 10	\$ 16	\$ 30,083	.05 %
Feeder Livestock	0	0	13	26,882	.05
Dairy	0	1	3	2,577	.10
Food and Field Crops	0	2	3	6,884	.04
Truck Crops	0	0	0	1,210	0
Fruit	0	1	3	9,451	.03
Forestry	1	2	3	3,658	.07
Other Agriculture	0	1	2	2,409	.06
Coal	33	299	466	8,177	5.70
Oil and Gas	312	962	4,322	1,015	425.81
Oil Shale	3,588	89,723	216,344	-	-
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	181	2,411	3,279	8,883	36.91
Food and Kindred	1	19	150	34,794	.43
Lumber and Wood	0	2	6	6,229	.10
Printing & Publishing	80	357	717	7,366	9.73
Fabricated Metals	18	154	452	2,570	17.59
Stone, Clay and Glass	34	620	1,732	2,832	61.16
Other Manufacturing	61	490	1,677	18,253	9.19
Wholesale Trade	23	183	416	42,724	.97
Service Stations	79	409	571	8,722	6.55
Other Retail	34	201	451	90,788	.39
Eating and Drinking	23	92	258	29,191	.88
Agricultural Services	0	1	2	6,829	.03
Lodging	41	121	230	17,471	1.31
Other Services	200	1,249	3,067	46,897	6.54
Transportation	123	2,145	4,132	64,180	6.44
Electric Energy	118	2,046	3,902	15,205	25.66
Other Utilities	290	4,615	9,313	29,997	31.05
Contract Construction	151	1,484	5,921	143,811	4.12
Rentals and Finance	222	6,714	8,996	87,678	9.12
Households	497	8,153	-	-	-
Local Government	240	6,176	-	-	-
Total	6,353	\$128,643	\$265,247	\$862,010	30.77%
Original 1980 Base	57,596	\$700,877			
Percent Change	11.03%	18.36 %			

The oil shale industry would contribute \$89,723,000 directly to value added in the sub-basin. If indirect effects are included, value added is estimated to be increased by \$128,643,000. The latter figure represents an increase in value added in the Upper Main Stem of 18.4 percent. Estimated changes in employment and value added would result in a small increase in per capita income in the area.

Colorado Alternative D

Alternative D is similar to the preceding one in that it involves the development of an oil shale industry. Output would be 1,000,000 barrels per day in the Upper Main Stem, and 150,000 barrels per day in the Green Sub-basin.

Impact on the Upper Main Stem Sub-Basin

The analysis follows the same procedures as those used in evaluating Colorado Alternative C. The primary difference is in the size of the adjustment burden. An oil shale industry this large would require a 50 percent increase in total employment in the Upper Main Stem (table III-8). A large percentage of the increased employment would be in the Oil Shale industry. Estimated employment in Oil Shale firms is 13,333.

In addition, employment in the Oil and Gas industry would rise by 5,246. Substantial increases in employment would also occur in Manufacturing and Service industries required to support the output, and income generated by the Oil Shale, and Oil and Gas industries. Total employment in the sub-basin would increase by 49.2 percent.

Value added in the region would be up \$449,966,000, a 64.2 percent increase in total value added in the sub-basin. Since value added would be increasing relatively more than required employment per capita income in the sub-basin would increase.

Some industries would be affected much more greatly than others. Nothing would happen to Truck Crops, Uranium or Zinc output. However, a 245 percent increase in Stone, Clay and Glass output would be required. Other Utilities output and Electric Energy output would have to increase 124 percent and 103 percent, respectively. The output of

TABLE III-8

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO POLICY D,
OIL SHALE INDUSTRY IN THE UPPER MAIN STEM AND GREEN RIVER SUB-BASINS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

<u>Sector</u>	<u>Change In Employment</u>	<u>Change In Value Added</u>	<u>Change In Output</u>	<u>Original 1980 Output Projections</u>	<u>Percent Change Output</u>
Range Livestock	11	\$ 40	\$ 62	\$ 30,083	.21%
Feeder Livestock	0	2	50	26,082	.19
Dairy	1	5	10	2,577	.39
Food and Field Crops	1	8	12	6,884	.17
Truck Crops	0	0	0	1,210	0
Fruit	0	4	10	9,451	.11
Forestry	4	9	10	3,658	.27
Other Agriculture	1	2	6	2,409	.25
Coal	132	1,195	1,864	8,177	22.80
Oil and Gas	5,246	3,849	17,288	1,015	1703.25
Oil Shale	13,333	295,396	865,374	-	-
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	722	9,646	13,116	8,883	147.65
Food and Kindred	5	74	200	34,794	.57
Lumber and Wood	2	8	24	6,229	.39
Printing and Publishing	319	1,427	2,868	7,366	38.94
Fabric Metals	72	615	1,806	2,570	70.27
Stone, Clay and Glass	135	2,479	6,926	2,832	244.56
Other Manufacturing	243	1,960	6,706	18,253	36.74
Wholesale Trade	91	732	1,664	42,724	3.90
Service Stations	314	1,634	2,284	8,722	26.19
Other Retail	135	804	1,402	90,788	1.54
Eating and Drinking	92	368	1,030	29,191	3.53
Agricultural Services	0	4	8	6,829	.12
Lodging	163	484	918	17,471	5.25
Other Services	799	4,995	12,266	46,897	26.16
Transportation	490	8,581	16,526	64,180	25.75
Electric Energy	470	8,183	15,606	15,205	102.63
Other Utilities	1,160	18,460	37,250	29,997	124.18
Contract Construction	604	5,935	23,684	143,811	16.47
Rentals and Finance	886	26,856	31,984	87,678	36.48
Households	1,919	31,509	-	-	-
Local Government	962	24,702	-	-	-
Total	28,312	\$449,966	\$1,060,954	\$862,010	123.07%
Original 1980 Base	57,596	\$ 700,877			
Percent Change	49.16 %	64.20 %			

the Oil and Gas industry would have to increase more than 17 times. Overall, the Oil Shale development would have a major impact on the sub-basin.

Impact on the Green River Sub-Basin

An input-output table had to be prepared for the Green which contained a set of row and column coefficients representing the structure of an oil shale industry. Appendix D of An Interindustry Analysis of the Colorado River Basin contains input-output tables for this sub-basin with a simulated oil shale industry of the size specified in the year 2010. The coefficients developed were compared with those for the 1980 oil shale industry in the Upper Main Stem to determine significant structural changes. Changes that were observed were modest, hence the Green River oil shale coefficients for 2010 were employed in evaluating 1980 impacts. The detailed and total adjustment burden on the Green River Sub-basin economy is shown in table III-9.

The greatest impact is the new shale oil industry. Employment would be 2,250. Increases in employment would also occur in other sectors. To support a new oil shale industry in the Green, employment in Other Services would have to increase by 116, Transportation by 212, and Other Utilities by 144.

Smaller increases in employment would occur in Printing and Publishing, Stone, Clay and Glass, Service Stations, Eating and Drinking establishments, etc. Total adjustment burden would require an increase in employment of 3,509. This represents a 8.9 percent increase in total employment in the sub-basin.

In the Green River Sub-basin value added payments would increase relatively more than employment. The total increase would be \$76,231,000. This represents an increase in value added payments in the area of 16.0 percent.

Colorado Policy Alternative E

This policy change, involving mineral production from national forests, proposes that 25 percent of the expected total increase in the output of Other Minerals in the Upper Main Stem and San Juan sub-basins would not be possible.

TABLE III-9

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF COLORADO POLICY D,
OIL SHALE INDUSTRY IN THE UPPER MAIN STEM AND GREEN RIVER SUB-BASINS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Agriculture	2	\$ 11	\$ 18	\$ 57,822	.03%
Forestry	14	41	48	2,022	2.37
Oil and Gas	5	380	832	179,922	.46
Oil Shale	2,250	55,528	129,645	-	-
Coal	15	260	435	59,514	.73
Uranium and Non Fuels	5	39	100	22,864	.44
Food and Kindred	1	5	26	10,557	.25
Lumber and Wood	2	5	29	5,133	.57
Printing and Publishing	67	186	313	1,474	21.24
Stone, Clay and Glass	39	564	1,109	1,918	57.82
Chemicals, Petroleum and Coal	28	14	590	2,914	20.25
Wholesale Trade	25	277	501	20,372	2.46
Service Stations	64	207	369	7,689	4.80
Eating and Drinking	10	43	179	20,292	.88
Other Retail	30	172	423	73,350	.58
Oil Field Service	0	1	14	21,430	.07
Lodging	18	41	142	24,961	.57
Other Services	116	792	1,694	17,267	9.81
Transportation	212	1,698	3,137	34,529	9.09
Electric Energy	50	626	1,872	32,796	5.71
Other Utilities	144	1,197	5,737	16,664	34.43
Contract Construction	77	559	2,356	47,813	4.93
Rentals and Finance	90	4,353	5,218	50,665	10.30
Households	74	1,846	-	-	-
Local Government	162	7,381	-	-	-
Total	3,509	\$76,231	\$154,787	\$711,968	21.74%
Original 1980 Base	39,298	\$ 477,888			
Percent Change	8.93 %	15.95 %			

Impact on the Upper Main Stem Sub-Basin

The effects of this change are relatively easy to estimate. Output of Other Mining in 1963 was \$7.0 million. Projected 1980 output is \$8.9 million. This represents an expected increase in output of \$1.9 million between 1963 and 1980. If 25 percent of the projected \$1.9 million increase is not available, it merely requires a downward adjustment in the projected increase, or \$470,000. Revised 1980 output would be \$8.4 million. The detailed and total adjustment burdens of this policy alternative are shown in table III-10.

The effects of Policy E would be quite minor in terms of total employment, value added, and output in the sub-basin. Employment in Other Mining would be decreased by 26, and would be accompanied by negligible decreases in the Service industries. Total employment would fall by 54 persons, or about 0.1 percent of total sub-basin employment. Value added payments would fall by \$686,000, about 0.1 percent of total sub-basin value added. Total output would be decreased by \$795,000, or .09 percent of the 1980 base.

Impact on the San Juan Sub-Basin

The same method described above was used here. Output of Other Mining in 1963 in the San Juan Sub-basin was \$8.0 million. Projected output in 1980 is \$10.7 million. If 25 percent of the \$2.7 million increase could not be available in 1980, projected output would have to be revised downward to \$10.0 million. The total and detailed adjustment burdens are shown in table III-11.

The industry most affected by this alternative would, of course, be the Other Mining industry, where output would be decreased by 6.3 percent. Overall, however, the impact would be fairly small. Total sub-basin output would decrease by \$1,038,000, or .13 percent of the total.

Employment in Other Mining would fall by 10, employment in Forestry would fall by 14, and employment in the various service sectors would fall by amounts ranging from zero to seven. The total adjustment burden on the economy would be a decrease in employment of 47 persons. This would

TABLE III-10

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO
POLICY E, DECREASED MINERAL PRODUCTION, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	-1	\$ -5	\$ -7	\$ 30,083	-.03%
Feeder Livestock	0	0	-5	26,082	-.02
Dairy	0	-1	-1	2,577	-.04
Food and Field Crops	0	-1	-1	6,884	-.02
Truck Crops	0	0	0	1,210	0
Fruit	0	-1	-2	9,451	-.02
Forestry	0	0	0	3,658	0
Other Agriculture	0	0	-1	2,409	-.05
Coal	0	-2	-3	8,177	-.04
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	-26	-347	-470	8,883	-5.32
Food and Kindred	-1	-8	-21	34,794	-.06
Lumber and Wood	0	0	0	6,229	0
Printing and Publishing	-1	-4	-8	7,366	-.11
Fabric Metals	0	-2	-6	2,570	-.23
Stone, Clay and Glass	0	0	-1	2,832	-.03
Other Manufacturing	0	-2	-8	18,250	-.04
Wholesale Trade	-1	-10	-22	42,724	-.05
Service Stations	-1	-3	-4	8,722	-.04
Other Retail	-6	-36	-63	90,788	-.07
Eating and Drinking	-1	-4	-11	29,191	-.04
Agricultural Services	0	0	0	6,829	0
Lodging	0	0	0	17,471	0
Other Services	-1	-9	-21	46,897	-.05
Transportation	-1	-10	-18	64,180	-.03
Electric Energy	-1	-11	-21	15,205	-.14
Other Utilities	-1	-11	-22	29,997	-.07
Contract Construction	-1	-6	-24	143,811	-.02
Rentals and Finance	-2	-46	-55	87,678	-.06
Households	-8	-138	-	-	-
Local Government	-1	-29	-	-	-
Total	-54	\$ -686	\$ -795	\$862,010	-.09%
Original 1980 Base	57,596	\$700,877			
Percent Change	-.10%	-.10%			

TABLE III-11

THE ADJUSTMENT BURDEN ON THE SAN JUAN SUB-BASIN OF COLORADO POLICY E,
DECREASED MINERAL PRODUCTION, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	0	\$ -1	\$ -1	\$ 17,866	-.10%
Dairy	0	-2	-3	3,710	-.09
Field Crops	0	-1	-1	4,477	-.02
Fruit	0	0	0	812	0
Forestry	-14	-38	-44	2,697	-1.63
Other Agriculture	0	0	-1	1,096	-.06
Coal	-1	0	-1	578	-.17
Oil and Gas	0	-3	-7	161,353	0
Uranium	0	0	0	49,066	0
Other Mining	-10	-259	-672	10,714	-6.27
Food and Kindred	-1	-6	-18	15,271	-.12
Lumber and Wood	0	0	-1	6,416	-.02
Printing and Publishing	0	-2	-5	5,716	-.09
Stone, Clay and Glass	0	0	-1	7,677	-.02
Other Manufacturing	0	-2	-13	22,508	-.06
Wholesale Trade	0	-6	-11	32,834	-.04
Service Stations	-1	-5	-8	6,277	-.12
Other Retail	-5	-33	-61	72,623	-.08
Eating and Drinking	-1	-3	-9	17,602	-.05
Agricultural Services	0	0	0	919	0
Oil Field Services	0	0	0	16,906	0
Lodging	0	-1	-2	15,859	-.01
Other Services	-1	-15	-27	36,486	-.07
Transportation	0	-12	-23	66,405	-.03
Electric Energy	-2	-11	-37	26,406	-.14
Other Utilities	-1	-7	-23	25,457	-.09
Contract Construction	-1	-3	-11	101,987	-.01
Rentals and Finance	-1	-39	-58	64,036	-.09
Households	-7	-196	-	-	-
Local Government	-1	-18	-	-	-
Total	-47	\$ -663	\$ -1,038	\$ 793,809	-.13%
Original 1980 Base	41,192	\$563,474			
Percent Change	-.11%	-.12%			

be accompanied by a decrease in total value added payments of \$663,000. Since value added payments would be falling relatively faster than employment, the overall impact would be a slight decrease in 1980 per capita income in the sub-basin.

Colorado Policy Alternative F

Increased investment is to be made in the development of big game ranges. Big game carrying capacity of the three sub-basins would be increased by 30 percent. (Increases in both in-basin and out-of-basin recreational visitors are assumed.) This increase is assumed to increase in-basin recreational use of public lands for big game hunting by 20 percent, and out-of-basin visits by ten percent more than 1980 base projections.

The analysis employed to estimate the impact of this policy on each of the three sub-basins is the same. The first step was to obtain 1980 expenditure data for big game hunting by sector, for the Federal lands portion of each sub-basin.^{5/} The second step was to apply the policy assumptions to these expenditures data. It was assumed, for example, that total expenditures in 1980 will be directly proportional to visitations. Given the previously estimated expenditures by sector and sub-basin, proportional increases were made in expenditures by sector, due to a 20 percent increase in in-basin visits and a ten percent increase in out-of-basin visits.

Impact on the Upper Main Stem Sub-Basin

The details of the resultant adjustment burden are shown in table III-12. Employment in Service Stations would increase by 16, in Other Retail by 14, and slightly smaller changes in Eating and Drinking establishments by 13, and in Other Services of 8. Minor increases in Range Livestock, Food and Kindred, Lodging, etc., would also occur.

The total adjustment required by this policy alternative would be an increase in employment of 76, an increase

5/ Appendix A-1, table A-12.

TABLE III-12

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO POLICY F,
INCREASED INVESTMENT IN BIG GAME RANGES, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	2	\$ 8	\$ 12	\$ 30,083	.04%
Feeder Livestock	0	0	9	26,882	.04
Dairy	0	1	2	2,577	.08
Food and Field Crops	0	2	2	6,884	.03
Truck Crops	0	0	0	1,210	0
Fruit	0	1	2	9,451	.02
Forestry	0	0	0	3,658	0
Other Agriculture	0	1	2	2,409	.08
Coal	0	2	3	8,177	.04
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	0	0	0	8,883	0
Food and Kindred	1	14	37	45,794	.11
Lumber and Wood	0	0	0	6,229	0
Printing and Publishing	1	6	12	7,366	.16
Fabricated Metals	0	0	0	2,570	0
Stone, Clay and Glass	0	0	1	2,832	.04
Other Manufacturing	0	3	9	18,253	.05
Wholesale Trade	1	9	20	42,724	.04
Service Stations	16	85	119	8,722	1.36
Other Retail	14	85	149	90,788	.16
Eating and Drinking	13	52	144	29,191	.49
Agricultural Services	2	2	3	6,829	.04
Lodging	4	11	21	17,471	.12
Other Services	8	47	116	46,897	.25
Transportation	1	17	33	64,180	.05
Electric Energy	1	11	26	15,205	.17
Other Utilities	1	11	23	29,997	.08
Contract Construction	1	7	29	143,811	.02
Rentals and Finance	2	62	73	87,678	.08
Households	7	121	-	-	-
Local Government	1	23	-	-	-
Total	76	\$ 581	\$ 847	\$862,010	.10%
Original 1980 Base	57,596	\$ 700,877			
Percent Change	.13%	.08%			

of about 0.1 percent in total sub-basin employment. Value added payments would increase by \$581,000, or 0.1 percent. Most of the increase in value added payments is expected to accrue to Service Stations, Other Retail Trade, Households, and Rentals and Finance.

Changes in output would follow the same trends. Overall, total output would increase by \$847,000, or 0.1 percent of the total.

Impact on the San Juan Sub-Basin

The initial impact of increased investment in big game hunting facilities in the San Juan would be an increase in total sub-basin sales to big game hunters by slightly over \$.5million. Increased sales would be realized primarily by Service Stations, Other Retail, and Eating and Drinking establishments. The detailed adjustment burden is indicated in table III-13.

The policy change would increase employment in Service Stations by 17 persons, in Other Retail by 13, in Eating and Drinking establishments by 19, and in Other Services by 10. Total employment would increase by 84, an increase of 0.2 percent in total sub-basin employment in 1980. Value added payments would increase by \$749,000, an increase of 0.13 percent in total sub-basin value added. Total gross output in the sub-basin would increase by about \$893,000, or 0.11 percent.

Impact on the Green River Sub-Basin

Expenditures associated with big game hunting on Federal lands on the Green River Sub-basin are estimated to be about \$2.5 million by residents of the sub-basin, and \$6.5 million by non-residents.^{6/} The assumed initial impact of increased investment would be increased expenditures by big game hunters on Federal lands by more than \$1.1 million. Most of the effect would be felt by Service Stations, Eating and Drinking establishments, Other Retail outlets, and Other Services. The overall adjustment that would occur is indicated in table III-14.

^{6/} Appendix A-1, table A-12.

TABLE III-13

THE ADJUSTMENT BURDEN ON THE SAN JUAN SUB-BASIN OF COLORADO POLICY F,
INCREASED INVESTMENT IN BIG GAME RANGES, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	0	\$ 1	\$ 2	\$ 17,866	.01%
Dairy	0	3	5	3,710	.13
Field Crops	0	1	1	4,477	.02
Fruit	0	0	0	812	0
Forestry	0	0	0	2,697	0
Other Agriculture	0	0	1	1,096	.09
Coal	1	0	1	578	.17
Oil and Gas	0	7	16	161,353	.01
Uranium	0	0	0	49,066	0
Other Mining	0	0	1	10,714	.01
Food and Kindred	1	9	25	15,271	.09
Lumber and Wood	0	1	1	6,416	.02
Printing and Publishing	1	7	20	5,716	*
Stone, Clay and Glass	0	1	2	7,677	.02
Other Manufacturing	0	2	9	22,508	.04
Wholesale Trade	1	7	16	32,834	.05
Service Stations	17	73	122	6,277	1.94
Other Retail	13	83	43	72,623	7.21
Eating and Drinking	19	61	164	17,602	.93
Agricultural Services	0	0	0	919	0
Oil Field Services	0	0	0	16,906	0
Lodging	4	12	28	15,859	.18
Other Services	10	104	191	36,486	.52
Transportation	1	33	62	66,405	.09
Electric Energy	2	10	34	26,406	.13
Other Utilities	2	13	40	25,457	.16
Contract Construction	1	5	16	101,987	.02
Rentals and Finance	2	64	94	64,036	.15
Households	8	235	-	-	-
Local Government	1	17	-	-	-
Total	84	\$ 749	\$ 893	\$793,809	.11%
Original 1980 Base	41,192	\$ 563,474			
Percent Change	.20%	.13%			

* Negligible

TABLE III-14

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF COLORADO POLICY F,
INCREASED INVESTMENT IN BIG GAME RANGES, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Agriculture	1	\$ 10	\$ 15	\$ 57,822	.03%
Forestry	0	0	0	2,022	0
Oil and Gas	0	5	11	179,922	.01
Coal	0	7	12	59,514	.02
Uranium and Non-Fuels	0	0	1	22,864	*
Food and Kindred	1	5	23	10,557	.22
Lumber and Wood	0	0	0	5,133	0
Printing and Publishing	1	3	5	1,474	.34
Stone, Clay and Glass	0	1	2	1,918	.10
Chemicals, Petroleum and Coal	0	1	2	2,914	.07
Wholesale Trade	1	11	19	20,372	.09
Service Stations	20	66	117	7,689	1.52
Eating and Drinking	21	46	193	20,292	.95
Other Retail	11	64	159	73,350	.22
Oil Field Services	0	0	0	21,430	0
Lodging	5	12	40	24,961	.16
Other Services	13	90	192	17,267	1.11
Transportation	2	15	27	34,529	.08
Electric Energy	0	6	18	32,796	.05
Other Utilities	1	6	30	16,664	.18
Contract Construction	0	2	7	47,813	.01
Rentals and Finance	1	55	66	50,665	.13
Households	6	84	-	-	-
Local Government	1	23	-	-	-
Total	85	\$ 512	\$ 939	\$711,968	.13%
Original 1980 Base	39,298	\$477,888			
Percent Change	.22%	.11%			

Employment in Service Stations would rise by 20, Eating and Drinking establishments by 21, and Other Retail by 11. The total employment adjustment burden of this policy alternative would be 85 jobs, or 0.22 percent of total sub-basin employment. This would be associated with an increase in value added payments of close to \$512,000, or 0.11 percent of total sub-basin value added. The net effect is a slight decrease in per capita value added in the sub-basin.

Colorado Alternative G

Under this alternative the development of winter sport facilities on public lands would be encouraged in the Upper Main Stem. It is assumed these actions would increase in-basin visitations by five percent, and out-of-basin visits by two percent above the projected 1980 base.

The analysis is essentially the same as that used for increased big game hunting expenditures. Recreation expenditures associated with skiing were assumed to be proportional to visitations, and were increased accordingly.^{7/} The total impact of such a policy change would be quite small, as indicated in table III-15. Detailed effects of this policy change are shown there.

The greatest impact would be in the Lodging industry, where employment would rise by 34. Other expected increases in employment would be 30 in Eating and Drinking establishments, 23 in Other Services, and 11 in Other Retail establishments. The total impact of this Alternative G would be to increase employment by 135, a 0.23 percent increase in total sub-basin employment.

Alternative G would have insignificant effects in agriculture and manufacturing industries. Employment in Range Livestock would be expected to rise by four, and employment in Food and Kindred Products by two. Most other industries would be unaffected.

Total sub-basin output would be increased by \$1,518,000, or 0.18 percent. Value added would increase \$958,000, or 0.14 percent of the total.

^{7/} Appendix A-1, table A-11.

TABLE III-15

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO POLICY G,
WINTER SPORTS, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	4	\$ 16	\$ 25	\$ 30,083	.08%
Feeder Livestock	0	1	19	26,882	.07
Dairy	0	2	4	2,577	.16
Food and Field Crops	0	3	5	6,884	.07
Truck Crops	0	0	0	1,210	0
Fruit	0	2	5	9,451	.05
Forestry	0	0	0	3,658	0
Other Agriculture	0	1	3	2,409	.12
Coal	0	0	7	8,177	.09
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	0	0	0	8,883	0
Food and Kindred	2	29	78	34,794	.22
Lumber and Wood	0	0	0	6,229	0
Printing and Publishing	2	7	16	7,366	.22
Fabricated Metals	0	0	0	2,570	0
Stone, Clay and Glass	0	1	2	2,832	.07
Other Manufacturing	1	4	14	18,253	.08
Wholesale Trade	2	18	42	42,724	.10
Service Stations	4	23	32	8,722	.37
Other Retail	11	68	118	90,788	.13
Eating and Drinking	30	119	334	29,191	1.14
Agricultural Services	0	3	5	6,829	.07
Lodging	34	103	196	17,471	1.12
Other Services	23	143	351	46,897	.74
Transportation	1	22	42	64,180	.07
Electric Energy	1	22	40	15,205	.26
Other Utilities	2	25	50	29,997	.17
Contract Construction	1	14	55	143,811	.04
Rentals and Finance	3	96	115	87,678	.13
Households	12	196	-	-	-
Local Government	2	40	-	-	-
Total	135	\$ 958	\$ 1,518	\$862,010	.18%
Original 1980 Base	57,596	\$ 700,877			
Percent Change	.23%	.14%			

Colorado Policy Alternative H

Policy H would decrease use of Bureau of Land Management grazing district lands and increase by an equivalent amount land devoted to all types of agricultural activities including livestock, dairy, food and field crops, and fruit production. In order to analyze this policy, carrying capacity on public lands of range land is assumed to be proportional to acreage. A one percent reduction in grazing district acreage would reduce carrying capacity by one percent. Further, it is assumed that sufficient water is available for irrigation, proportional to that expected on private farms in 1980.

Policy H applies to all three sub-basins, in varying degrees. In the Upper Main Stem, grazing district lands would be reduced by eight percent, in both the San Juan and Green by five percent.

Impact on the Upper Main Stem Sub-Basin

Total land area administered by the Bureau of Land Management in the Upper Main Stem is 5,364,600 acres. It is estimated that 95 percent of BLM managed lands are grazing district land. This would indicate that there are 5,096,400 acres of grazing district land in the Upper Main Stem. Hence, if eight percent of this is diverted to agricultural activities, it would involve shifting 407,700 acres to irrigated agricultural uses. This compares with 567,800 acres of irrigated land projected for the Upper Main Stem in 1980.

BLM lands diverted to agricultural purposes will probably be used in much the same manner as private agricultural lands are currently being used. In 1959 there were 3,926,000 acres in private farms. Of this, 413,500 (10.5 percent) were harvested; 89.5 percent was inactive or in livestock grazing. This same ratio is assumed here. In any given year only 10.5 percent of the land diverted by BLM is used for crops. This means an increase in 1980 of 42,800 acres (7.5 percent) in the 567,800 acres of irrigated and harvested crop lands.

In the 1980 base projections the Bureau of Land Management was estimated as supplying 400,000 a.u.m. By diverting eight percent of BLM grazing district lands, this would

TABLE III-16

THE ADJUSTMENT BURDEN ON THE UPPER MAIN STEM SUB-BASIN OF COLORADO POLICY H,
LAND USE ALLOCATION, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Range Livestock	260	\$ 962	\$1,480	\$ 30,083	4.92%
Feeder Livestock	0	2	41	26,882	.15
Dairy	16	142	259	2,577	10.04
Food and Field Crops	41	446	709	6,884	10.30
Truck Crops	0	1	2	1,210	.13
Fruit	9	380	947	9,451	10.02
Forestry	1	2	2	3,658	.05
Other Agriculture	1	3	9	2,409	.36
Coal	1	13	20	8,177	.24
Oil and Gas	0	0	0	1,015	0
Uranium	0	0	0	88,911	0
Zinc	0	0	0	16,333	0
Other Mining	0	2	3	8,883	.04
Food and Kindred	4	60	164	34,794	.47
Lumber and Wood	0	2	5	6,229	.07
Printing and Publishing	5	22	47	7,366	.64
Fabricated Metals	0	0	1	2,570	.04
Stone, Clay & Glass	0	2	10	2,832	.35
Other Manufacturing	6	47	160	18,253	.88
Wholesale Trade	8	62	140	42,724	.33
Service Stations	9	47	65	8,722	.75
Other Retail	48	287	500	90,788	.55
Eating and Drinking	8	32	88	29,191	.30
Agricultural Services	32	281	547	6,829	8.02
Lodging	1	4	8	17,471	.04
Other Services	11	67	165	46,897	.35
Transportation	6	104	201	64,180	.31
Electric Energy	3	55	115	15,205	.77
Other Utilities	4	58	118	29,997	.39
Contract Construction	4	44	175	143,811	.12
Rentals and Finance	14	421	540	87,678	.57
Households	58	957	-	-	-
Local Government	10	258	-	-	-
Total	560	\$ 4,763	\$6,518	\$862,010	.76%
Original 1980 Base	57,596	\$ 700,877.			
Percent Change	.7 %	.68 %			

Impact on the San Juan Sub-Basin

Again, it is assumed that BLM lands diverted to private use are used in the same way as private lands. Diverting five percent of the 9,235,584 acres of BLM lands would add 462,000 to total farm lands. Only a portion would be harvested in any given year. In 1959, 208,600 acres, of a total private acreage of 5,201,000 acres, were harvested in the San Juan. The new acreage would add 8.9 percent to the total land in farms, and is assumed to increase total output in all agricultural sectors by 8.9 percent. That is, 18,565 of the additional acreage would be irrigated and harvested.

A decrease of five percent in BLM grazing district lands would decrease feed meal and the supply of Range Livestock by five percent. This is a reduction of 1.2 percent in total sub-basin feed.

Due to more intensive management of the diverted lands, which are placed in private cattle and sheep farms, output of Range Livestock would increase by 8.9 percent. The net effect of the policy would be to increase livestock output from a projected base of \$17,866,000 to \$19,243,000. The adjustment burden of this policy is shown in table III-17.

In the other agricultural industries, dairy output in 1980 would increase from \$3,710,000 to \$4,040,000; field crop production from \$4,477,000 to \$4,876,000; and fruit production from \$812,000 to \$884,000. The policy alternative would have little effect on Other Agriculture.

The total adjustment burden imposed by Policy H on the San Juan would be to increase total sub-basin employment by 360, 0.9 percent more than projected sub-basin employment. Most of this increase would be in the Range Livestock sector where employment would rise by 193. In other sectors, employment would rise by 30 in Other Retail, by 39 in Household and Professional employment, by 17 in Dairy Production and by 13 in Field Crops.

The greatest relative changes in output would be in Dairy and Field Crop industries where output would be increased by 8.9 percent. The output of the Range Livestock industry would increase by 7.7 percent. The output of Agricultural Services would have to increase by 4.9 percent.

TABLE III-17

THE ADJUSTMENT BURDEN ON THE SAN JUAN SUB-BASIN OF COLORADO POLICY H,
LAND USE ALLOCATION, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Change Output
Range Livestock	193	\$ 967	\$1,377	\$ 17,866	7.71%
Dairy	17	203	330	3,710	8.90
Field Crops	13	307	399	4,477	8.90
Fruit	1	36	72	812	.27
Forestry	1	2	3	2,697	.10
Other Agriculture	0	2	4	1,096	.33
Coal	2	1	4	578	.69
Oil and Gas	0	18	43	161,353	.03
Uranium	0	0	0	49,066	0
Other Mining	0	2	5	10,714	.05
Food and Kindred	2	28	77	15,271	.51
Lumber and Wood	1	3	7	6,416	.12
Printing and Publishing	2	16	32	5,716	.56
Stone, Clay and Glass	0	3	10	7,677	.13
Other Manufacturing	1	9	46	22,508	.20
Wholesale Trade	2	30	66	32,834	.20
Service Stations	5	20	33	6,277	.53
Other Retail	30	192	356	72,623	.49
Eating and Drinking	5	17	47	17,602	.27
Agricultural Services	2	19	45	919	4.87
Oil Field Services	0	0	1	16,906	.01
Lodging	1	4	8	15,859	.06
Other Services	9	88	162	36,486	.45
Transportation	3	125	238	66,405	.36
Electric Energy	6	37	123	26,406	.47
Other Utilities	5	36	112	25,457	.44
Contract Construction	5	26	93	101,987	.09
Rentals and Finance	7	199	293	64,036	.46
Households	39	1,106	-	-	-
Local Government	8	146	-	-	-
Total	360	\$ 3,642	\$3,986	\$793,809	.50%
Original 1980 Base	41,192	\$563,474			
Percent Change	.87 %	.65 %			

Value added payments in the sub-basin would increase by \$3,642,000 (0.7 percent). This increase, compared with the 0.9 percent increase in total sub-basin employment would result in a small decrease in per capita value added in the San Juan.

Impact on the Green River Sub-Basin

BLM administered lands in the Green River Sub-basin total 13,141,200 acres. Five percent would be shifted to agriculture. Total land in farms is projected to be 9,313,300 acres. About 545,800 acres of this is harvested crop land. Total land in private farms would increase by 7.1 percent, or 657,060 acres, 38,752 of which would be harvested.

The initial impact of Policy H would be a loss of Range Livestock output due to the decreased grazing on BLM lands. This would be more than offset eventually by more intensive use of lands previously used for grazing. Total agricultural output would be increased by 7.1 percent, less the small loss due to decreased BLM grazing. The net effects would be an increase of \$3,750,000 in total agricultural output.

The total impact of Policy H on the Green would be to increase sub-basin employment by 525 (table III-18). Increased employment in agriculture would be 342. This would be followed by increased employment in Other Retail industry by 38, in Household and Professional employment by 55. Increases in employment in Other Services and Transportation would be 18 and 14, respectively.

Total value added payments, as shown in table III-18, would be increased by \$4,439,000 (.9 percent). This is associated with a 1.3 percent increase in total sub-basin employment. A slight decrease in sub-basin per capita value added payments would thus occur. Total output in the sub-basin would increase \$5,896,000, 0.8 percent more than projected 1980 total output for the Green River Sub-basin.

Colorado Alternative I

Alternative I would involve the development of a pulp and paper manufacturing complex in the Green River Sub-basin. The facility would have a daily capacity of 500 tons.

TABLE III-18

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF COLORADO POLICY H,
LAND USE ALLOCATION, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Change In Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Agriculture	342	\$ 2,393	\$3,750	\$ 57,822	6.49%
Forestry	1	2	3	2,022	.13
Oil and Gas	0	30	67	179,922	.04
Coal	3	60	100	59,514	.17
Uranium and Non-Fuels	1	4	11	22,864	.05
Food and Kindred	4	21	100	10,552	.95
Lumber and Wood	1	2	7	5,133	.13
Printing and Publishing	2	6	9	1,474	.63
Stone, Clay and Glass	0	2	4	1,918	.20
Chemicals, Petroleum and Coal	1	7	22	2,914	.76
Wholesale Trade	3	37	67	20,372	.33
Service Stations	6	20	35	7,689	.46
Eating and Drinking	11	24	103	20,242	.51
Other Retail	38	214	526	73,350	.72
Oil Field Services	0	0	1	21,430	.01
Lodging	2	5	18	24,961	.07
Other Services	18	123	263	17,267	1.52
Transportation	14	113	208	34,529	.60
Electric Energy	3	44	130	32,796	.40
Other Utilities	2	17	80	16,664	.48
Contract Construction	1	10	41	47,813	.09
Rentals and Finance	6	293	351	50,665	.69
Households	55	745	-	-	-
Local Government	11	267	-	-	-
Total	525	\$ 4,439	\$5,896	\$711,968	.83%
Original 1980 Base	39,298	\$ 477,888			
Percent Change	1.34%	.93%			

Production would be based on a sulphate process similar to that used in the mill in Navajo County, Arizona.

Impact on the Green River Sub-Basin

Data for typical patterns of purchases and sales for the pulp and paper industry were reported in the Gila Sub-basin study of 1960.^{8/} Another study in which sales information was available was made by the Lower Colorado Region Comprehensive Interagency Framework Studies group. They simulated a pulp and paper industry for the Little Colorado Sub-basin for 1965.^{9/} After comparing the two sources of data, the 1965 Little Colorado figures were selected, with a minor modification.

In the industry simulated for the Little Colorado Sub-basin, no sales were made to other local processing sector industries. The entire output was assumed to be exported from the Little Colorado. The largest part was assumed to have left the borders of the Colorado River Basin, since there was only a very small local market in printing and publishing. In contrast, 15 newspapers were operating in the Green Sub-basin in 1960.^{10/} This sector requires a substantial input of newsprint which is currently imported from outside the sub-basin.

If a pulp and paper industry were to be operating in the Green by 1980, it would likely supply newsprint to local newspapers. To determine the appropriate coefficient for the sale of pulp and paper to printing and publishing, the ratio of delivered cost of newsprint to value of shipments of newspapers, as derived from the Census of Manufacturers,

^{8/} Bernard Udis (editor), An Analysis of the Economy of the Gila River Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries (Boulder: Bureau of Economic Research, University of Colorado, August, 1967).

^{9/} Such an operation was assumed to divide its output equally between newsprint and craft liner board.

^{10/} Bernard Udis (editor), An Analysis of the Economy of the Green River Sub-Basin of the Colorado Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries (Boulder: Bureau of Economic Research, University of Colorado, August, 1967), p. 171.

TABLE III-19

THE ADJUSTMENT BURDEN ON THE GREEN RIVER SUB-BASIN OF COLORADO POLICY I,
PULP AND PAPER INDUSTRY, 1980

(Thousands of 1963 Dollars at Producers' Prices, Employment at Actual Number)

<u>Sector</u>	<u>Change In Employment</u>	<u>Change In Value Added</u>	<u>Change In Output</u>	<u>Original 1980 Output Projections</u>	<u>Percent Change Output</u>
Agriculture	6	\$ 45	\$ 71	\$ 57,822	.12%
Forestry	236	703	820	2,022	40.55
Oil and Gas	2	147	323	179,922	.18
Coal	12	199	334	59,514	.56
Uranium and Non-Fuels	1	10	25	22,864	.11
Food and Kindred	3	20	95	10,557	.90
Lumber and Wood	48	210	600	5,133	11.69
Pulp and Paper	770	4,981	17,571	-	-
Printing and Publishing	6	16	28	1,474	1.90
Stone, Clay and Glass	0	6	11	1,918	.57
Chemicals, Petroleum and Coal	4	24	79	2,914	2.71
Wholesale Trade	6	68	123	20,372	.60
Service Stations	23	76	135	7,689	1.76
Eating and Drinking	31	68	288	20,292	1.42
Other Retail	93	528	1,299	73,350	1.77
Oil Field Services	0	1	5	21,430	.02
Lodging	6	15	51	24,961	.20
Other Services	24	162	346	17,267	2.00
Transportation	123	988	1,825	34,529	5.29
Electric Energy	18	231	691	32,796	2.11
Other Utilities	35	293	1,402	16,664	8.41
Contract Construction	3	25	106	47,813	.22
Rentals and Finance	14	669	801	50,665	1.58
Households	141	1,919	-	-	-
Local Government	25	1,171	-	-	-
Total	1,631	\$12,575	\$27,088	\$711,968	3.80%
Original 1980 Base	39,298	\$ 477,888			
Percent Change	4.15%	2.63%			

was used.^{11/} The resulting direct coefficient was 0.1983. No other processing sector sales were anticipated.

Until now, high transport costs and relative water scarcity have precluded the development of a pulp and paper industry in the Green. However, if such a development did take place, the estimated adjustment burden on the economy of the Green is shown in table III-19.

The pulp and paper industry would employ 770 persons, and would add approximately \$4,981,000 to the sub-basin's value added payments. The two existing sectors most greatly affected would be Forestry and Transportation, where employment would increase by 236 and 123, respectively. This would represent an increase in forestry output of more than 40 percent in 1980. Transportation output would increase by 5.3 percent.

A pulp and paper industry would also stimulate an increase in the Forestry industry's output of 40.6 percent and in the Lumber and Wood industry's output of 11.7 percent. This represents an increase of 284 jobs and an increase in value added of \$913,000. Overall, the required increase in employment would be 1,631. This represents an increase in total expected sub-basin employment in 1980 of 4.3 percent.

Public Policy Alternatives Concerning Washington State

Timber and recreation are the two most important public land outputs in the State of Washington. Policy alternatives considered in this section deal exclusively with the adjustment burdens imposed on the Washington economy as a result of alternative changes in the supplies of these two commodities.^{12/}

^{11/} U. S. Bureau of the Census, U. S. Census of Manufacturers: 1963, Major Group 27, Newspaper, Periodicals, Books, and Miscellaneous Publishing (Washington, D. C., U. S. Government Printing Office) P. 36, table 7-A, and p. 18; table 3.

^{12/} See Chapter II, table II-27. Appendix E lists the alternatives.

Washington Policy Alternative A

Policy A would result in restricting public timber cut to 1963 levels. Even flow of timber from public lands would be strictly enforced, and the full allowable cut would be sold annually.

Impact on the State of Washington

Most of Washington's public timber cut is controlled by the United States Forest Service. Bureau of Land Management timber sales are inconsequential from the standpoint of the present study. Forest Service timber sales in 1963 were 1.6 billion board feet. Cut in 1980 from forest lands administered by the U.S.F.S. were estimated to be 2.1 billion board feet. These estimates compare with a total state timber cut of 5.4 billion board feet in 1963, and a projected cut of 7.0 billion board feet in 1980.

If public timber cut were held to 1.6 billion board feet in 1980, this was assumed to reduce total Washington timber cut in 1980 by seven percent to 6.5 MMBM. There would be no increases in private timber cut to offset the Federal restriction.^{13/}

If timber supply is reduced, Washington State timber processors and exporters would be forced to reduce their outputs and sales. Some processors are able to out-bid others. Moreover, the quality of logs taken out of production might not represent existing distributions of log species and grades. It is difficult, therefore, to assign the reduced supply among industries. The net effect on the processing and export sectors was estimated to be:^{14/}

^{13/} The State of Washington supplies a relatively small portion of the total national market for timber products. It is reasonable to assume, therefore, that small increases (decreases) in the Washington State supply of timber and forest products would have no noticeable affect upon prices of these products. In the absence of other market changes, there would be no incentive for private timber sellers to adjust their cuts in response to changes in the supply of public timber.

^{14/} See Appendix B, page 204.

Timber	- 7.0%
Plywood	-11.2%
Lumber	- 3.2%
Pulp and Paper	- 3.5%
Other Wood	- 0.0%
Log Exports	- 3.5%

The total and detailed adjustment burdens this policy would place on the Washington economy are shown in table III-20. The total decrease in output would be \$244.1 million, or about one percent over the projected 1980 base.

Employment in timber and forest products industries would fall by about 2,852 persons. Decreased demands by these industries for intermediate industrial products and labor services would cause an additional decrease in employment of 12,071.

Industries hardest hit by indirect effects of the timber supply reduction would be Food and Kindred Products, Wholesale and Retail Trade, Services, Construction, and Government.

Total effect on employment would be a decrease of 14,923. This would be associated with decreased value added payments of about \$165,800,000. Compared with existing projections for employment and value added in 1980, the assumed timber supply reduction would cause a one percent decline in projected employment for the state, and a one percent decline in value added. This signifies no decrease in per capita value added in Washington.

The figures in table III-20 indicate the significant leverage public timber has in Washington's economy. For example, a \$1,000 decline in the output of timber will cause a \$2,200 decrease in the output of forest products processing industries. A \$1,000 decrease in the overall forest products industry, including timber, can cause a \$1,300 change in the output of all other industries. Overall, a \$1,000 decline in the output of Timber will result in a total decline in output of \$7,600. Not surprisingly, the supply of public timber has very important long-run implications for the economy of Washington State. Because of these additional supply linkages, policies

TABLE III-20

THE ADJUSTMENT BURDEN ON WASHINGTON STATE OF WASHINGTON POLICY A,
 A SEVEN PERCENT DECREASE IN TIMBER PRODUCTION, 1980
 (Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Livestock and Products	-218	\$ -0.9	\$ -2.9	\$ 398.6	-.72%
Other Agriculture, Fishing & Mining	-53	-1.3	-2.0	787.8	-.25
Food and Kindred Products	-1,448	-2.7	-9.4	1,849.0	-.50
Timber	-707	-19.2	-32.2	459.3	-.69
Sawmills	-337	-4.8	-10.6	337.0	-3.15
Plywood	-952	-11.4	-28.4	253.0	-11.23
Pulp, Paper and Paperboard Mills	-856	-16.7	-34.3	978.5	-3.50
Other Wood	-	-	-	149.1	-
Chemicals	-31	-1.3	-2.5	659.8	-.38
Petroleum Refining	-9	-.8	-3.6	515.0	-.70
Stone, Clay and Glass	-69	-1.0	-2.3	263.5	-.87
Primary Metals	-26	-.4	-.8	1,366.2	-.06
Aerospace	-	-	-	4,397.1	-
Other Non-Durable Manufacturing	-183	-1.8	-3.1	493.0	-.63
Other Durable Manufacturing	-111	-1.8	-3.9	1,276.4	-.31
Transportation, Communication, & Public Utilities	-369	-9.5	-18.8	2,248.1	-.83
Wholesale and Retail Trade	-3,273	-26.3	-33.0	3,336.2	-.10
Services	-3,198	-21.4	-29.4	3,240.7	-.91
Construction	-1,042	-10.7	-26.9	2,653.6	-1.01
Government	-2,041	-17.3	-	-	-
Households	-	-16.5	-	-	-
Total Adjustment Burden	-14,923	-165.8	\$ -244.1		
Original Base	1,437,805	\$16,742.0	\$25,661.9		
Percent Change	-1.0%	-1.0%	-1.0%		

pertaining to the supply of public timber can significantly affect growth and development in Washington's economy.

Washington Policy Alternative B

Policy B involves more intensive management of National Forests by the use of improved technology, shorter rotation, improved inventory procedures, and related activities. The assumed result of this policy is to increase timber cut on national forests by 20 percent. In addition, the allowable cut would be increased by 10 percent to permit more rapid harvesting of over-mature timber.

The Impact on the State of Washington

The effect of Policy B would be to increase projected 1980 public timber from 2.1 MMBM to 2.7 MMBM. This represents an increase in the Washington State timber production of 8.5 percent.

After all capacity adjustments have been made, it is anticipated that output of the Timber industry will increase by \$39.1 million, Sawmills by \$12.8 million, Plywood by \$34.4 million, and the output of Pulp and Paper and Paper-board Mills by \$41.7 million. The impact on total output would be an increase of \$296.3 million (table III-21).

The effect of increasing the cut of public timber would involve substantial impacts on other industries throughout the state. Employment in Food and Kindred Products would increase by 1,758. Increases in employment would occur in Wholesale and Retail Trade, Services, Construction, and Government. In addition, smaller employment impacts would occur in other industries.

The total impact on the state would be to increase employment by 18,159, 1.3 percent more than projected total state employment. This would be associated with an increase in value added in the state of \$234.1 million. The latter figure represents 1.4 percent of gross state product.

It is conceivable that Policy B could be fully realized, at least with respect to the additional employees required. In the absence of an increased timber harvest, the forest products industries are expected to suffer declining

TABLE III-21

THE ADJUSTMENT BURDEN ON WASHINGTON STATE OF WASHINGTON POLICY B,
 AN 8.5 PERCENT INCREASE IN TIMBER PRODUCTION, 1980
 (Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	Employment	Change In Value Added	Change In Output	Original 1980 Output Projections	Percent Output Change
Livestock and Products	264	\$ 1.1	\$ 3.5	\$ 398.6	.88%
Other Agriculture, Fishing & Mining	64	1.6	2.5	787.8	.31
Food and Kindred Products	1,758	36.2	11.4	1,849.0	.61
Timber	859	23.3	39.1	459.3	8.52
Sawmills	410	5.9	12.8	337.0	3.80
Plywood	1,156	13.9	34.4	253.0	13.60
Pulp, Paper and Paperboard Mills	1,041	20.3	41.7	978.5	4.25
Other Wood	-	-	-	149.1	-
Chemicals	37	1.5	3.1	659.8	.47
Petroleum Refining	11	1.0	4.3	515.0	.83
Stone, Clay and Glass	83	1.2	2.8	263.5	.11
Primary Metals	31	.4	1.0	1,366.2	.07
Aerospace	-	-	-	4,397.1	-
Other Non-Durable Manufacturing	222	2.1	3.7	493.0	.75
Other Durable Manufacturing	135	2.1	4.8	1,276.4	.38
Transportation, Communication & Public Utilities	486	11.5	22.8	2,248.1	.10
Wholesale and Retail Trade	3,975	32.0	40.0	3,336.2	1.20
Services	3,883	26.0	35.7	3,240.7	1.10
Construction	1,265	13.0	32.6	2,653.6	1.23
Government	2,479	21.0	-		
Households	-	-	-		
Total Adjustment Burden	18,159	\$ 234.1	\$ 296.3		
Original Base	1,437,805	\$16,742.0	\$25,661.9		
Percent Change	1.3%	1.4%	1.2%		

employment. Such a policy would help to moderate the expected declines.

Washington Policy Alternative C

This policy alternative would restrict log export sales from National Forests and other Federal public timber lands to 200 million board feet.

Impact on the State of Washington

A restriction on export sales would be expected to have only a marginal effect on the state's economy. The immediate effect of this policy would be to provide more timber for local processors and to restrict the supply of logs going to export markets. Supply changes of these kinds would, however, be expected to depress the price of timber in the domestic market, and increase the price of timber in the export market. The result of a relative price change of this kind could make log exports more attractive than domestic conversion.

Private timber producers might sell an increased share of their timber cut to export markets, and decrease the share they sell to domestic processors. The final effect of this policy would thus be a reallocation of existing supply. The difference would be that public timber would be supplying a greater portion of supply of timber to domestic processors, while private timber would be supplying a relatively greater portion of the export market than before.^{15/}

^{15/} Senator Morse proposed what is now an amendment to the Foreign Assistance Act of 1968 (16USC616) which would restrict the export of public timber and which would further restrict domestic processors from substituting public for private logs, thereby reallocating the existing supply of logs in the manner described. Because of the almost impossible enforcement problem and because more than enough timber is available, from sources not involved with public timber, to offset the difference between desired exports and that allowed from public lands, the Morse amendment is likely to be largely ineffectual.

Log exports would be approximately the same, perhaps slightly lower. Total output of the forest products industries would be almost the same, perhaps slightly less than expected. The net effect of this policy would be to make domestic processors relatively more dependent upon the vagaries of public policy, since a larger percentage of their inputs would be coming from public lands.

Washington Policy Alternative D

Policy D calls for reallocation of five percent of public commercial forest land to exclusive recreational use. The allowable public timber cut would fall correspondingly. It is assumed that both out-of-state and in-state recreational visits to public lands would increase five percent over the projected 1980 level.

Impact on the State of Washington

Public timber is projected to supply 30 percent of the total timber supply in Washington State, hence a five percent decrease in the allowable cut would result in a 1.5 percent decrease in total Washington State timber production. No corresponding increase in the private cut is assumed. Because of the decrease in public timber supply, output of Sawmills, Plywood, and Pulp, Paper and Paperboard Mills would also be reduced.^{16/}

Recreational expenditures are assumed to be proportional to visits. Sales to final demand by industries catering to the outdoor recreationist are therefore assumed to increase by \$4.9 million to resident tourists, and by more than \$3.5 million to non-resident tourists. Increased sales are expected to be proportionate to industries supplying goods and services to recreationists on public lands. That is, Food and Kindred Products sales to recreationists would increase by five percent, Petroleum Refining sales to recreationists would increase by five percent, and so on.^{17/} Sales to resident visitors are also assumed to represent a net increase in in-state spending. They would reduce import purchases and would not, therefore, be reallocated from other local purchases. Because of the latter assumption, the impact of Policy D is probably slightly overstated.

^{16/} See Appendix B, page 204.

^{17/} See Chapter II, table II-27.

The two effects of Policy D are shown in table III-22. A decline in timber production would have a depressing effect upon the state's economy. Increased tourism would have an offsetting effect. The effect of a 1.5 percent decrease in timber production would reduce employment by 3,211. Increased sales to tourists visiting public lands would result in an increase in employment of 1,718. The net effect would be a decline in state employment of 1,493.

The result of decreasing timber production by 1.5 percent would decrease gross state product (value added) by \$42.3 million. Increased sales to tourists would increase gross state product by \$17.6 million. The net effect is a decline in value added of \$24.7 million.

Not all industries will bear the burden of the net effects of this policy change. Increased sales to tourists would more than offset declines caused by decreased timber production in Petroleum Refining, Other Non-durable Manufacturing, Other Durable Manufacturing, Other Agriculture, Fishing, and Mining. Relative to currently expected levels of employment and value added in 1980, this Policy D would decrease employment by 0.1 percent and value added payments by 0.15 percent. The net effect is a slightly decreased per capita value added in the State of Washington.

Washington Policy Alternative E

This policy calls for a 20 percent reduced yield on five percent of commercial public forests due to scenic easements along public roads. As a result of these scenic easements, in-state driving for pleasure is assumed to increase by two percent. Out-of-state visits to public lands would increase by two percent over projected 1980 levels.

Impact on the State of Washington

Policy E represents a 1.0 percent decrease in public timber or a 0.3 percent decrease in total timber production. Sales to non-resident tourists would increase \$1.4 million. The effect of an increase in in-state driving for pleasure is not possible to estimate accurately. There are no reliable data on the subject.

TABLE III-22

THE ADJUSTMENT BURDEN ON WASHINGTON STATE OF WASHINGTON POLICY D, DUE TO:

(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	1.5% Decrease in Timber Production			5% Increase in Resi- dent Recreation Expendi- tures Attributed to Public Lands			5% Increase in Non- Resident Recreation Expenditures Attributed to Public Lands			Total Adjustment			Original 1980 Output Projection	Percent Change Output
	Change in Employ- ment	Change in Value Added	Change in Output	Change in Employ- ment	Change in Value Added	Change in Output	Change in Employ- ment	Change in Value Added	Change in Output	Employ- ment	Value Added	Output		
Livestock	-47	\$ -.2	\$ -.6	16	\$.1	\$.2	20	\$.1	\$.3	-11	\$ 0.0	\$ -.1	\$ 398.6	.03%
Other Agriculture, Fishing and Mining	-12	-.3	-.5	9	.2	.4	11	.3	.5	8	.2	.4	787.8	.05
Food and Kindred Products	-310	-6.4	-2.0	26	.5	1.6	33	.7	2.0	-251	-5.2	1.6	1,849.0	.07
Timber	-152	-4.1	-6.9	-	-	-	-	-	-	-152	-4.1	-6.9	459.3	-1.50
Sawmills	-73	-1.6	-2.8	3	.0	.1	4	.1	.1	-66	-1.5	-2.6	337.0	-.77
Plywood	-204	-2.5	-6.1	-	-	-	-	-	-	-204	-2.5	-6.1	253.0	-2.41
Pulp, Paper and Paper- board Mills	-184	-3.6	-7.4	2	.0	.1	3	.1	.1	-179	-3.5	-7.2	978.5	-.73
Other Wood	-	-	-	6	.0	.1	8	.1	.1	14	.1	.2	149.1	.13
Chemicals	-7	-.3	-.6	2	.1	.1	3	.1	.1	-2	-.1	-.4	659.8	-.06
Petroleum Refining	-2	-.2	-.8	2	.1	.6	3	.2	.8	3	.1	.6	515.0	.12
Stone, Clay and Glass	-15	-.2	-.5	3	.0	.1	4	.1	.1	-8	-.1	-.3	263.5	-.11
Primary Metals	-6	-.1	-.2	4	.1	.1	5	.1	.1	3	.1	.0	1,366.2	-
Aerospace	-	-	-	-	-	-	-	-	-	-	-	-	4,397.1	-
Other Non-Durable Manufacturing	-39	-.4	-.7	29	.3	.5	37	.4	.6	27	.3	.4	493.0	.08
Other Durable Manu- facturing	-24	-.4	-.9	8	.1	.3	10	.2	.4	6	-.1	-.2	1,276.4	-.02
Transportation, Communica- tion & Public Utilities	-86	-2.1	-4.0	19	.5	.9	24	.6	1.1	-43	-1.0	-2.0	2,248.1	-.22
Wholesale and Retail Trade	-702	-5.7	-7.1	234	1.9	2.2	295	2.3	2.8	-173	-1.5	-2.1	3,336.7	-.17
Services	-685	-4.6	-6.3	246	1.7	2.2	310	2.1	2.8	-129	-.8	-1.3	2,240.7	-.04
Construction	-225	-2.3	-5.8	53	.5	1.2	67	.7	1.5	-103	-1.1	-3.1	2,653.6	-.12
Government	-438	-3.7	-	97	.8	-	122	1.0	-	-219	-1.9	-	-	-
Households	-	-3.6	-	-	.7	-	-	.8	-	-	-2.1	-	-	-
Total Adjustment Burden	-3,211	\$ -42.3	\$ -53.2	759	\$ 7.6	\$ 10.7	959	\$ 10.0	\$ 13.4	-1,493	\$ -24.7	\$ -29.0		
Original 1980 Base	1,437,805	\$16,742.0	\$25,661.9											
Percent Change	-.22%	-.25%	-.21%	.05%	.05%	.04%	.07%	.06%	.05%	-.10%	-.15%	-.19%		

The net effect of Policy E would be to decrease employment, output, and value added. As shown in table III-23, the reduction in timber production would result in a decline of total state output of \$10.6 million, or 0.04 percent of the total. Total employment would be reduced by 641, or 0.04 percent of the total. This would be associated with a decline in value added of \$8.2 million. Partially offsetting this decline in employment and value added would be the increased economic activity attributable to increased tourist expenditures. These expenditures would increase total employment by 304 and value added by \$2.6 million.

The net effect of the policy would be to decrease employment by 337 jobs. Most of the burden would fall on the forest products industries and in the service and trade industries. Total state value added would decline by \$5.6 million. If these declines are compared with expected 1980 levels of employment and value added, overall employment would decline by 0.02 percent and value added by 0.03 percent. Total output would decline \$6.5 million, or 0.03 percent.

Public Policy Output Multipliers

The results of the impact analyses carried out in the previous sections are summarized in table III-24. The summary data for the Upper Colorado River sub-basins are the actual dollar impacts, whereas the impacts of public policy alternatives in Washington are presented in a generalized form. The Upper Colorado River Basin data may be translated into generalized terms by working back from the multiplier. For example, Colorado Policy Alternative A in the Upper Main Stem could be expressed as: given an initial impact of \$1.0 million, total output in the sub-basin will change by \$2.1 million, an extra change of \$1.1 million. The multiplier allows the application of the study results to situations calling for varying degrees of the same type of action. If the same policy alternative called for half the increased grazing development, it can be determined that the initial impact would be \$4,320,000 increase in total output. Then, with a multiplier of 2.1, the total impact is estimated to be an increase in total output in the sub-basin of \$9,072,000.

TABLE III-23

THE ADJUSTMENT BURDEN ON WASHINGTON STATE OF WASHINGTON POLICY E, DUE TO:

(Millions of 1963 Dollars at Producers' Prices, Employment at Actual Number)

Sector	.3% Decrease in Timber Production			2% Increase in Non-Resident Recreation			Total Adjustment			Original 1960 Output Projection	Percent Output Change
	Change in Employment	Change in Value Added	Change in Output	Change in Employment	Change in Value Added	Change in Output	Employment	Value Added	Output		
Livestock and Products	-9	\$.0	\$ -.1	6	\$.0	\$.1	-3	\$.0	\$.0	\$ 398.6	-
Other Agriculture, Fish- ing and Mining	-2	-.1	-.1	4	.1	.2	2	.0	.1	787.8	.01%
Food and Kindred Products	-62	-1.3	-.4	10	.2	.6	-52	-1.1	.2	1,849.0	.01
Timber	-30	-.8	-1.4	-	-	-	-30	-.8	-1.4	459.2	-.31
Sawmills	-15	-.2	-.5	1	.0	.0	-14	-.2	-.5	337.0	-.15
Plywood	-41	-.5	-1.2	-	-	-	-41	-.5	-1.2	253.0	-.47
Pulp, Paper and Paperboard	-37	-.7	-1.5	1	.0	.0	-36	-.7	-1.5	978.5	-.15
Other Wood	-	-	-	2	.0	.0	2	.0	.0	149.1	-
Chemicals	-1	-.1	-.1	1	.0	.0	0	-.1	-.1	659.8	-.02
Petroleum Refining	0	.0	-.2	1	.0	.2	1	0	.0	515.0	-
Stone, Clay and Glass	-3	.0	-.1	1	.0	.0	-2	.0	-.1	263.5	-.04
Primary Metals	-1	.0	.0	2	.0	.0	1	.0	.0	1,366.2	-
Aerospace	-	-	-	-	-	-	-	-	-	4,397.1	-
Other Non-Durable Manu- facturing	-8	-.1	-.1	12	.1	.2	4	.0	.1	493.0	-.02
Other Durable Manufacturing	-5	-.1	-.2	3	.0	.1	-2	-.1	-.1	1,276.4	-.01
Transportation, Communica- tion and Public Utilities	-17	-.4	-.8	8	.2	.4	-9	-.2	-.4	2,248.1	-.02
Wholesale and Retail Trade	-140	-1.1	-1.4	94	.8	.9	-46	-.3	-.5	3,336.2	-.01
Services	-137	-.9	-1.3	98	.7	.9	-39	-.2	-.4	3,240.7	-.01
Construction	-45	-.5	-1.2	21	.2	.5	-24	-.3	-.7	2,653.6	-.01
Government	-88	-.7	-	39	.3	-	-49	-.4	-	-	-
Households	-	-.7	-	-	.3	-	-	-.7	-	-	-
Total Adjustment Burden	-641	\$ -8.2	\$ -10.6	304	\$ 2.6	\$ 4.1	-337	\$ -5.6	\$ -6.5		
Original 1960 Base	1,437,805	\$16,742.0	\$25,661.9								
Percent Change	-.04%	-.04%	-.04%	.02%	.02%	.02%	-.02%	-.03%	-.03%		

TABLE III-24

PUBLIC POLICY OUTPUT MULTIPLIERS
IN THE UPPER COLORADO RIVER BASIN, 1980
(Thousands of 1963 Dollars at Producers' Prices)

Policy Alternative	Sub-Basin	Initial Impact	Demand Impact	Multiplier
A	Upper Main Stem	\$ 9,630	\$ 10,769	1.1
	San Juan	1,444	2,461	1.7
	Green River	2,980	4,683	1.6
B	Upper Main Stem	1,022	2,092	2.0
	San Juan	444	746	1.7
	Green River	1,109	1,738	1.6
C	Upper Main Stem	216,344	265,247	1.2
D	Upper Main Stem	865,374	1,060,954	1.2
	Green River	129,645	154,787	1.2
E	Upper Main Stem	-479	-795	1.7
	San Juan	-672	-1,038	1.5
F	Upper Main Stem	408	847	2.1
	San Juan	505	893	1.8
	Green River	544	939	1.7
G	Upper Main Stem	964	1,518	1.6
H	Upper Main Stem	1,480	5,382	3.6
	San Juan	1,377	3,986	2.9
	Green River	3,750	5,896	1.6
I	Green River	17,571	27,029	1.5

PUBLIC POLICY MULTIPLIERS IN WASHINGTON STATE, 1980
(Dollars)

	Initial Impact	Supply Impact	Demand Impact	Total Impact	Multiplier
Public Timber	\$ 1.0	\$ 2.3	\$ 4.3*	\$ 7.6	7.6
Public Recreation	1.0	---	1.6	2.6	2.6

*In response to both initial and supply impacts.

The data presented in table III-24 indicate two important conclusions. The first is that demand impact multipliers in Washington are higher than any developed for the three Upper Colorado River sub-basins. There are a number of reasons for this. The most important is that Washington's economy is more self-sufficient. Leakages from the economy in the form of imports are therefore much smaller than in any of the three Upper Colorado sub-basins.

The second conclusion is that the leverage public policy has on a regional economy is increased because of effects on both the demand for commodities and the supply of raw materials. If there had been no forest products processing in the State of Washington, the total impact of a \$1 million increase, or decrease, in timber output would be about \$2.3 million as a result of demand impact alone. Since processing industries do exist in Washington, an increase of \$1 million in the output of timber has a forward-linked, or supply impact, as well as a backward-linked, or demand impact. This increases the multiplier by about three times to 7.6, meaning that the initial \$1 million change would lead to a total change of \$7.6 million.

It is not surprising there are no multipliers of this magnitude for the Upper Colorado River Basin. Most raw materials produced in the three sub-basins are exported to processing industries outside of the region. It is important to note that the changed resource output will have a supply impact on processing industries outside the region. As a result, the total impact will exceed that measured in the Upper Colorado River Basin.

CHAPTER IV

NATIONAL AND REGIONAL IMPLICATIONS OF PUBLIC POLICY

When the Federal government initiates policy changes, there is an obvious interest in the repercussions of these changes nationally as well as in particular regions or areas such as the State of Washington and the Upper Colorado River Basin. In the sections that follow possible implications for other regions, and the nation, are presented. This analysis includes regions which have relatively small holdings of public lands.

Public Lands in the United States: 1963

Approximately one-third of the United States' land area is publicly owned (table I-1). Even though public ownership is extensive, the contribution public lands make to the nation's economy is a relatively small percent of total gross output. As shown in table IV-1, in 1963 public lands contributed 1.2 percent of the total feed requirements of the Livestock and Livestock Products industry. About 22.4 percent of the nation's timber harvest came from public lands. The production of minerals on public lands accounted for 7.8 percent of total output of Fuel Minerals, and 2.4 percent of the output of Non-fuel Minerals.^{1/} The production of raw materials on public lands in 1963 accounted for \$2.1 billion of total national output. This was less than a quarter of one percent.

Expenditures associated directly with recreation on public lands were \$2.9 billion in 1963.^{2/} Most of this

^{1/} The importance of public land outputs to the economy are underestimated when only direct output is considered, since manufacturing industries which rely on raw materials provided by public lands are also partially dependent upon those lands. This is especially true of Oil Refining, Forest Products and Food and Kindred Products industries.

^{2/} See Appendix A-3.

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TABLE IV-1

UNITED STATES INDUSTRIAL TOTAL GROSS OUTPUT DIRECTLY ATTRIBUTABLE TO PUBLIC LANDS, 1963⁺
(Millions of 1963 Dollars at Producers' Prices)

<u>Sector</u>	<u>Total 1963 Output</u>	<u>Public Land Output</u>	<u>Percent Of Sector</u>	<u>Percent Of Total (All Sectors)</u>
Agriculture	\$ 26,098	\$ *	*	*
Livestock	27,251	327	1.2 %	.03 %
Forestry	1,911	428	22.4	.04
Fuel Minerals	15,189	1,185	7.8	.12
Non-Fuel Minerals	5,085	122	2.4	.01
Fisheries	1,437	-	-	-
Construction	82,263	-	-	-
Manufacturing	399,512	1,660**	.4	.17
Transportation & Public Utilities	83,437	172**	.2	.02
Trade	118,296	415**	.4	.04
Finance, Insurance, & Real Estate	115,845	-	-	-
Services, Etc.	113,657	653**	.6	.07
Government Enterprises	12,085	-	-	-
Total	\$1,002,102	\$ 4,962	-	.5 %

+ Does not consider dependence of processors on public raw materials.

* Negligible

** Related to recreation on public lands.

TABLE IV-2

UNITED STATES EMPLOYMENT DIRECTLY ATTRIBUTABLE TO PUBLIC LAND OUTPUTS, 1963
(Employment in Thousands)

<u>Sector</u>	<u>Total Sector Employment</u>	<u>Sector Employment Attributable To Public Lands</u>	<u>Percent Of Sector</u>	<u>Percent Of All Sectors</u>
Agriculture	3,225	*	-	-
Livestock	1,044	13	1.2 %	.02 %
Forestry	90	20	22.4	.03
Fuel Minerals	437	34	7.8	.05
Non-Fuel Minerals	197	5	2.4	.08
Fisheries	65	-	-	-
Construction	2,958	-	-	-
Manufacturing	17,023	68	.4	.11
Transportation & Public Utilities	3,983	8	.2	.01
Trade	11,840	47	.4	.08
Finance, Insurance, & Real Estate	2,933	-	-	-
Services & Industries n.e.c.	8,226	49	.6	.08
Government	9,247	45	.5	.08
Total	61,268	290	-	.47 %

* Negligible

was \$1,660 million sales made by manufacturing industries. The Transportation, Trade and Service industries had sales of \$172 million, \$415 million, and \$653 million, respectively. Sales to recreational users of public lands represented 0.4 percent of Manufacturing sales, 0.2 percent of Transportation sales, 0.4 percent of total Trade activity, and 0.6 percent of all Service sales.

Overall, U. S. public lands supported 0.5 percent of national output in 1963; the source of most of this was recreation on public lands. Regionally, most of these expenditures occurred in the Eleven Western States and Alaska.

More than 95 percent of all public lands are in the latter twelve states, and most of the economic activity attributable to public lands takes place in those same twelve states. As the Eleven Western States and Alaska generate about 20 percent of national output, public lands account for about 2.4 percent of this amount. Although public land outputs account for an insignificant portion of the rest of the country's output, public policy does have economic effects on non-public land states (states other than the Eleven Western States and Alaska).

The 1963 employment in each industry attributable to public lands is indicated in table IV-2. In addition, Federal civilian employment associated with public lands is identified. The relative importance of public lands to employment nationally is not significantly different from their importance in total and regional output.

The Changing Role of Public Lands in the United States

As shown in table IV-3, public lands are expected to support 0.7 percent of the nation's total output in 1980. This represents a 40 percent increase in their relative importance from 1963. This projection is based on the assumption that there will be no significant changes in the amount, and type, of land owned by the public.

Most of the projected increase is expected to come from increased recreation expenditures on public lands. These

TABLE IV-3

a/

UNITED STATES INDUSTRIAL TOTAL GROSS OUTPUT DIRECTLY ATTRIBUTABLE TO PUBLIC LANDS, 1980
(Millions of 1963 Dollars at Producers' Prices)

Sector	Total 1980 Output	Public Land Output	Percent of Sector	Percent Of Total (All Sectors)
Agriculture	\$ 39,420	*	*	*
Livestock	37,438	\$ 327	.9 %	.02 %
Forestry	2,877	644	22.4	.04
Fuel Minerals	22,106	1,724	7.8	.12
Non-Fuel Minerals	7,529	181	2.4	.01
Fisheries	2,152	-	-	-
Construction	130,490	-	-	-
Manufacturing	639,867	3,998	.6	.27
Transportation, Communication & Public Utilities	139,220	413	.3	.03
Trade	177,431	998	.6	.06
Finance, Insurance, & Real Estate	198,063	-	-	-
Services, Etc.	182,933	1,561	.9	.10
Government Enterprises	19,579	-	-	-
Total	\$1,599,105	\$9,846	-	.6 %

* Negligible

a/ Projected employment based on expected industrial growth rates as reported in
The American Economy to 1975, by Clopper Almon, Jr., Harper & Row, 1966.

TABLE IV-4

a/

UNITED STATES EMPLOYMENT DIRECTLY ATTRIBUTABLE TO PUBLIC LAND OUTPUTS, 1980
(Employment in Thousands)

Sector	Total Sector Employment	Sector Employment Attributable To Public Lands	Percent of Sector	Percent Of All Sectors
Agriculture	1,780	*	-	-
Livestock	788	7	.9	.01 %
Forestry	95	21	22.4	.02
Fuel Minerals	308	24	7.8	.03
Non-Fuel Minerals	172	4	2.4	*
Fisheries	71	-	-	-
Construction	4,059	-	-	-
Manufacturing	25,501	153	.6	.17
Transportation & Public Utilities	3,903	12	.3	.01
Trade	16,458	49	.3	.06
Finance, Insurance, & Real Estate	4,810	63	1.3	.07
Services & Industries n.e.c.	13,244	-	-	-
Government	15,720	79	.5	.09
Total	86,909	412	-	.47 %

* Negligible

a/ Projected employment based on expected industrial growth rates as reported in
The American Economy to 1975, by Clopper Almon, Jr., Harper & Row, 1966.

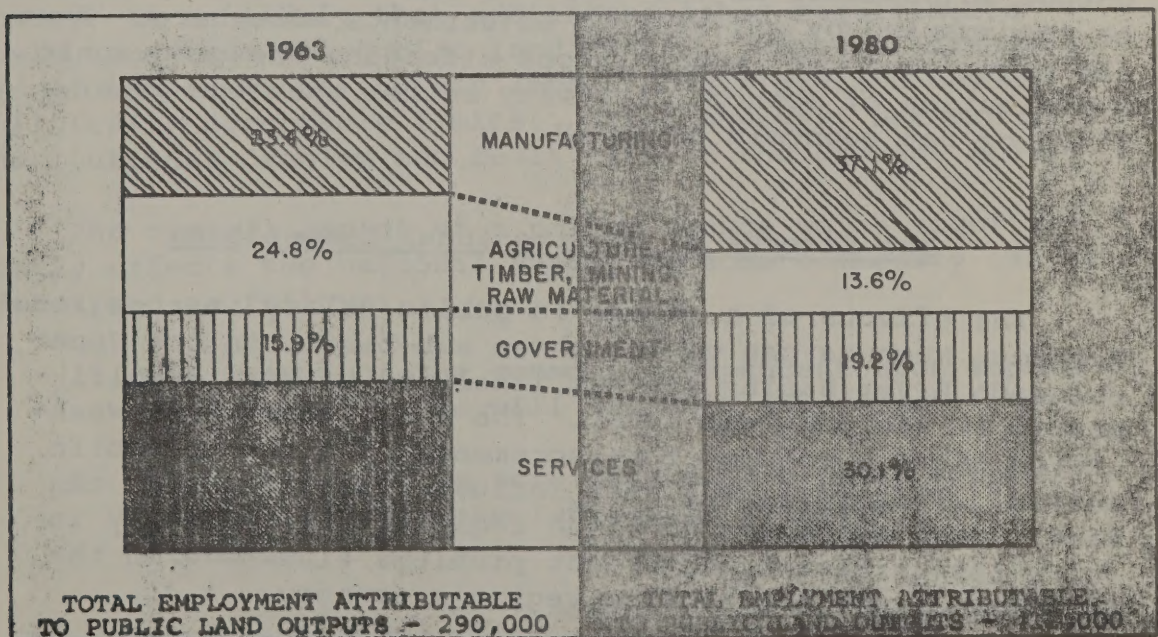
expenditures are projected to increase from \$2.9 billion to about \$7.0 billion in 1980. Sales by Manufacturing, Transportation, Trade and Service industries to recreationists are also expected to rise proportionately. In the Trade sector, recreation expenditures are expected to increase from 0.4 percent of total sales in 1963 to 0.6 percent in 1980. This is an increase from 0.4 percent in 1963.

The declining relative importance of "hard" public land commodities is primarily due to a shift from grazing livestock to feeder livestock. The relative importance of the public share of the other resource sectors should be about the same in 1980 as in 1963. The relative importance of recreation on public lands is expected to rise significantly as income increases, hence public policy concerning recreational activities will become increasingly important to the economy. This is especially true in the Eleven Western States and Alaska where the impacts of changes in public policy will necessarily be greatest.

The 1980 employment attributable to public lands is shown in table IV-4. As shown in figure IV-1, manufacturing

FIGURE IV-1

DISTRIBUTION OF U.S. EMPLOYMENT ATTRIBUTABLE TO PUBLIC LAND OUTPUTS, COMPARING 1963 AND 1980



employment attributable to public lands is expected to make the greatest contribution to total employment attributable to public land. Government employment directly related to public land management is expected to be relatively more important in 1980. Overall, the relative importance of the resource sectors is expected to fall in terms of employment.

The Impact of Public Land Policy on the United States

As was shown in Chapter III, a change in public policy regarding the supply of raw materials from public lands, or the availability of recreation opportunities, can have multiple, and far-reaching, effects on the regional economy involved. The effects often extend to seemingly unrelated sectors, only indirectly linked to the public lands.

In previous sections of this chapter it was noted that most direct economic activity based on public lands takes place in the Eleven Western States and Alaska. This is an obvious reflection of the geographic distribution of these lands. Initial impacts will, therefore, be felt most acutely in these twelve states.

To the extent the twelve public land states compete economically with the other 38 states, the total national impact of any change in public policy will be reduced. Output adjustments in the twelve public land states may be accompanied by off-setting adjustments elsewhere. Thus, the major economic impact is one affecting the geographic distribution of economic activity rather than the generation of net economic activity.

The Effects of Interregional Competition

The effects of a change in public policy in a regional economy, such as one of the three sub-basins in the Upper Colorado River Basin, are not likely to be felt significantly at the national level. The same is true for Washington State's economy for incremental changes in public policy. Therefore, whatever influence public policy can have on the economies of those regions will generally involve insignificant adjustment problems elsewhere in the nation's or the surrounding region's economy.

However, if policies assumed in the present study for Washington State or the Upper Colorado River Basin were applicable to all public lands, the impact of each policy alternative would be considerably different. Output changes could be quite sizeable and could increase or decrease national output significantly. Increased output of various commodities in public land states would begin to compete more intensely with producers and suppliers of those commodities in non-public land states. If significant increases in the total national output of a commodity were made, the price of that commodity might have to fall to clear the market. As the price of the commodity falls, producers in non-public land states, responding to market forces, would be forced to reduce their outputs. Whether these reductions in output would be equal to output increases in public land states is difficult to estimate a priori. Such a redistribution, however, can be expected to effectively reduce the net adjustment burden when viewed from a national level.

The full impacts of significant policy changes might require considerable interregional migration. Industries would have to find new employees to increase production. If the economy is fully employed, additional employees would have to come either from other industries or other regions. Since employment in the non-public states might be contracting as a result of significant changes in public policy, it is likely that additional labor requirements would come from non-public land states. However, traditional labor immobility may impair this migration beyond politically acceptable limits. This, however, becomes an institutional problem not dealt with in the present study.

The overall impact of a policy change which significantly effects the national supply of some commodity can be summarized as follows:

1. The output of the commodity dependent upon inputs from public lands will increase (decrease).
2. The output of the same commodity dependent upon inputs from private lands will decrease (increase).

3. The total output of the commodity will probably increase (decrease).
4. Either interindustry or interregional migration of labor may be necessary.
5. If interindustry or interregional migration is not possible, the full impact of the policy change will not be felt in terms of changed output, but rather changed wages and prices.

Consider the policy alternative which called for an increase in Washington State's timber cut. Washington supplies a small portion of the total timber market. In the long run the output of timber and timber products in Washington State would expand with the increase in supply of timber. The initial effect of this policy change is likely to be to drive down the price of timber and timber products somewhat. This would be followed by a cutback in production by marginal timber producers in other regions. At a national level there might not be any change in the total output of timber and timber products, only a regional redistribution of the nation's timber output.^{3/} If so, Southern or mountain state producers might be forced to reduce output because of increased competition from the Northwest.

To repeat, where a policy change applies to a fairly small region, the major effect of the policy change may be to encourage regional redistributions of output and employment. When policies apply to all public lands, the pressure would be to change total national output as well as to encourage interregional migration. Changes in public policy concerning the supplies of certain basic resources may also have the effect of increasing or decreasing the total national output of that commodity. If so, price adjustments may be necessary to clear markets. Price adjustments could, in turn, affect outputs of substitute materials. Potential repercussions in this case could be widespread.

^{3/} This analysis assumes that the demand for timber does not change. If the demand for timber were increasing rapidly, the effects of the policy change could not be separated from the effects of the demand change. Increasing demand would have the effect of reducing the off-setting reduction in non-public land states.

The Federal government may be a sufficiently large producer to affect the price of a commodity. This is especially true of timber. From an economic standpoint this places the Federal government in a somewhat awkward position. Most Federal agencies are not guided by the profit motive, which directs the allocation of resources in the private sector.

Public agencies are likely to respond more slowly than private producers to changes in demand. Unless agencies respond to these changes, all the burden of change is imposed on the private sector. In other words, public agencies may force the private sector to operate as a residual supplier. At the same time public holdings, or inventories, of resources would be non-optimal.

Public Lands in Other Regions

The absolute magnitude of the impact of a change in public policy on a region's economy depends upon many factors, including (1) degree of economic interdependence in the economy, (2) the economic size of the region, and (3) the economic importance of public lands. Whether the full impact of the public policy change is realized as a net change in economic activity also depends upon the elasticity of the supply of labor.^{4/}

To determine the potential size of impact a change in public policy may have on a region, it is useful to compare the impacts with various policy changes on the two regional economies--the Upper Colorado River Basin and the State of Washington.

As was noted in Chapter III, the State of Washington is considerably more developed economically than any of the three Colorado River sub-basins. Washington's economy is both more complex and self-sufficient. Because inter-industry ties are more complex, a change in the output of any one industry will be felt more thoroughly throughout the economy. If an economy is highly self-sufficient,

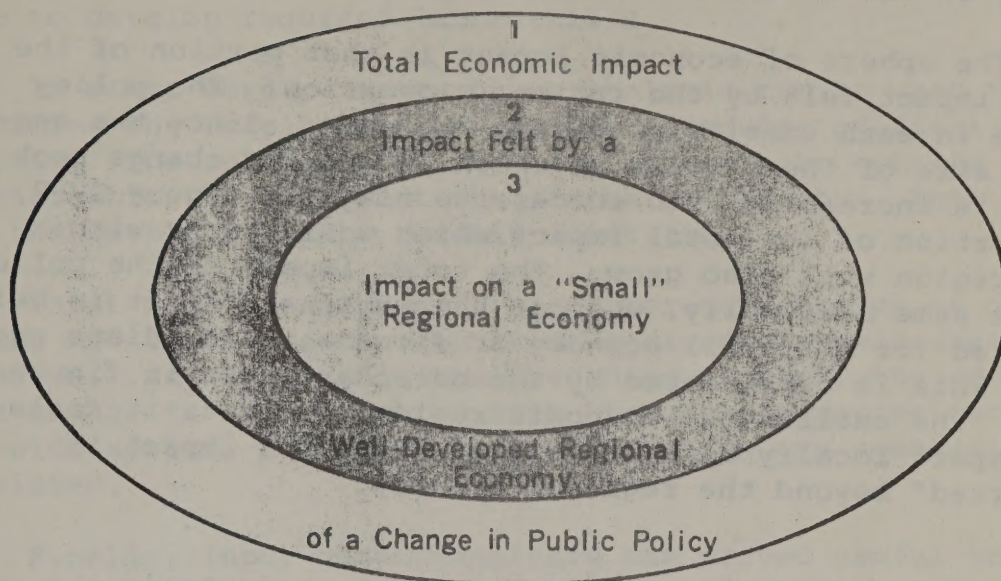
^{4/} If the supply of labor is highly responsive to changes in the wage rate, the elasticity of supply is said to be high. Thus, a perfectly inelastic supply of labor would mean that no additional labor can be obtained, whatever the increase in wages.

"leakages" caused by imports are much smaller, therefore, the impact of a change in the output of one industry "goes farther" because expenditures are not lost but are kept and respent. That is, the total potential impact of that change in output is larger than it would be if the industries in the region were importing large portions of their inputs. A consequence of these two factors is that receipts and income circulate longer in Washington's economy than in any of the three sub-basin economies.

In order to determine the potential size of an impact of a change in public policy in a region other than the Upper Colorado River Basin or the State of Washington, a proportional impact estimate can be obtained. This would require estimating the absolute size of employment and output in the region, as well as the relative importance of the basic resource sectors, the manufacturing industries, and the service industries in the region. Finally, an accurate estimate of the economic role of public lands is required, i.e., what portion of the region's economic activity is dependent on public lands.

If the economy is large and produces a significant quantity of manufactured goods, there will be a good deal of interdependence in the economy as well as a high probable degree of self-sufficiency. If the region's economy is structurally comparable to that of the State of Washington, the magnitude of the impact would be comparable to those exhibited for Washington State. The resource sector multipliers (table III-24) might be reasonable proxy measures for similar regions. On the other hand, if the region's economy is dependent upon a small number of industries, whose outputs go primarily to final markets, and where a large portion of the inputs to these industries are imported, the potential magnitude of the impact of a change in public policy in that region would be comparable to the impacts estimated for the Upper Colorado River Basin. There are, obviously, many alternative combinations of degree of development, reliance on final markets, and availability of local inputs. These would, in turn, lead to a wide range of intermediate adjustment.

FIGURE IV-2
SPHERES OF ECONOMIC IMPACT



Regional Versus National Impact

The Total Impact of Public Policy

Industries and inhabitants of all regions buy and sell commodities outside of the region. Changes in industrial output within the region will, therefore, have an impact on industries and wage earners beyond regional boundaries. The impacts measured in Chapter III do not measure the full potential magnitude of outside impacts. How much greater than the partial or regional impact of a change in public policy is the total national impact?

To answer this question, assume the policy change would have some total impact which occurs completely within some geographic and economic boundary. Figure IV-2 illustrates how the impact of that policy will be felt in regions of varying development. The smaller circle might be likened to any of the three Colorado River sub-basins. The intermediate sized circle might be comparable to Washington

State. Or, more realistically, the intermediate sized circle could be likened to the combined economies of the states of Arizona, New Mexico, Utah, Colorado, and Wyoming. The largest circle indicates the total impact of the change in public policy in the United States.

The sphere of economic impact is that portion of the total impact felt by the region in question. The policy change in each case is precisely the same. Since the economic size of the regions in which the policy change took place is increasing with successive rings in figure IV-2, the portion of the total impact which would occur within each region will also grow. The total impact of the policy is the same nationally, whether the regional impact is being measured for the small economy or for the intermediate economy. This is represented by the outside circle in figure IV-2. The smaller the economic region, the less it feels the impact locally and the more of the total impact is "exported" beyond the regional economy.

The Contribution of Input-Output Analysis

Applications

Input-output analysis can be a useful planning tool. However, an understanding of the information provided by input-output is necessary if the technique is to be used most fruitfully.

Traditionally, input-output analysis has been used as an analytical tool for economic planners. Given the specification of the economy's technology and industrial interrelationships, the planner can determine the output each industry must produce if a specified level of final output is to be attained. If, for example, one thousand automobiles are to be produced, input-output analysis indicates how many tons of steel, gallons of paint, tires, and consumer goods are necessary to sustain workers involved in the production of all commodities, including the automobiles.

If the schedule of direct and indirect requirements associated with the production of one thousand automobiles is attainable, the economy can produce the autos. If sufficient steel is not available, planners can initiate efforts to remove existing "bottlenecks."

Sufficient labor may not be available to some industries, since the production of most commodities requires specialized labor skills. Where direct and indirect requirements tables indicate labor problems, efforts can be made to develop required labor skills.

In other words, input-output analysis can be used to determine the feasibility of various schedules of final outputs. The solutions for total output may be totally unattainable, but at least the planners know why. That is, the bottlenecks are readily identifiable.

Input-output analysis is also extremely useful in determining how extensive the impact of a given economic change might be. As was seen in the preceding chapter, the effects of a change in the output of even the basic resource sectors are wide spread, affecting industries which are seemingly unrelated.

Finally, input-output analysis has proved useful to economists making economic projections and forecasts. It is a simple enough task to project the growth of existing industries at historic growth rates, but without the use of input-output analysis, the researcher may have no idea of the feasibility of his projections. That is, his projections might more than exhaust any conceivable supply of resources available to the area.

Limitations

No information is provided through input-output regarding returns to production relative to some other alternative use of resources. In other words, input-output analysis is not a tool for determining the value of a production goal; it only indicates total requirements of achieving that goal. In this sense, input-output analysis is only a counting device.

Potential impacts of changes in public policy have been estimated for two regional economies in the preceding chapters. The potentiality of these impacts should be stressed; there is no guarantee the full impacts would ever be realized. Moreover, the profitability of original policy changes were not considered in detail. It is the responsibility of the policy maker to integrate this knowledge of the local economic

effects with other economic information in policy formulation. Although of considerable importance in public land policy, regional effects cannot be interpreted in isolation. If this limitation is recognized, input-output analysis can be an extremely effective analytical tool for decision making.

APPENDIX A-1

THE DERIVATION OF PUBLIC LAND RELATED OUTPUTS AND EXPENDITURES IN THE UPPER COLORADO RIVER BASIN

Information required to estimate shares of industry output attributable to public lands in each study region is included in this appendix. Reliable data were often not available at the county level, hence data for the Upper Colorado sub-basins were particularly difficult to obtain. The sub-basin aggregates, however, provide realistic estimates of actual outputs even if estimates at the county level are subject to error.

Production of Leasable Minerals on Public Lands^{1/}

Leasable minerals which occur in the Upper Colorado River Basin in greatest abundance are coal, oil, and natural gas. For purposes of the present study, oil and gas estimates have been combined to permit comparisons with "Oil and Gas" sectors of the sub-basin input-output tables.

Estimates of production of these minerals on public lands were derived from data provided by the Denver office of the Bureau of Land Management. These data covered cash receipts--royalties and fee collections--from leased minerals by county, for 1964.^{2/} Royalty data provide combined estimates of production on public land for coal, oil and gas.

^{1/} Leasable minerals are defined as deposits of oil, gas, coal, potassium, sodium phosphate, oil shale, native asphalt, solid and semi-solid bituminim, and bituminous rock, including oil and impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined or quarried. In addition, sulphur is leasable in New Mexico.

^{2/} These data for 1964 were assumed to approximate the previous year, and were thus used as a proxy for 1963 estimates.

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alty

An additional import data source was the U. S. Geological Survey which provided a means to estimate total production by commodity and county for 1963.^{3/} To determine public land output, it was necessary to disaggregate the royalty figures by commodity to permit comparable analysis.

The assumption was made that the relative production of each mineral was independent of the form of land ownership. If coal production is twice oil and gas production in the county, the same proportion is assumed to hold for the production on both public and private lands in that county. While this assumption may not be entirely accurate at the county level, the estimates obtained at the sub-basin level may be expected to show a relatively small margin of error.

The rates at which royalties are paid to the government for coal and oil and gas produced on public lands, the total amount of royalties received by the government, and the ratios of total coal production to the total oil and gas production per county are known. The rate at which royalties are paid on coal production is 2.36 cents per dollar of output; the rate at which royalties are paid on oil and gas is 12.5 cents per dollar of output. These facts yield the following two relationships:

$$(1) \quad R = .0236 \text{ VC} + .125 \text{ VOG}$$

$$(2) \quad K = \text{VC}/\text{VOG}$$

R represents total royalties paid to the Federal government in the aggregate for coal and oil and gas produced on public lands; K represents the county ratio of coal to oil and gas production; and VC and VOG represent, respectively, the total value of coal produced on public lands and the total value of oil and gas produced on public lands. VC and VOG are unknowns. Equations (1) and (2), when solved simultaneously, yield county estimates of the value of coal produced on public lands, and of the value of oil and gas produced on public lands.

^{3/} See U. S. Geological Survey, Minerals Yearbook, 1963, Volume III, Area Reports: Domestic.

In particular counties, this method yielded oil and gas figures which appeared too large since they exceeded total reported production of oil and gas in the county. To resolve this problem, an alternative method was developed utilizing cash receipt data (royalties and fees), provided by the United States Geological Survey regional oil and gas offices in Roswell, New Mexico, and Casper, Wyoming. County figures covered the year 1965 and were adjusted to 1963. This was done by assuming percentage changes between 1963 and 1965 were equal to percentage changes in the value of oil and gas produced on public lands for the entire state during the same period.

The latter method was used in conjunction with that described previously to yield estimates of county production of oil and gas from public lands which were considered reasonable. Unfortunately, the Bureau of Land Management was unable to provide royalty data for San Juan County, New Mexico. For this county, the only data available were from the United States Geological Survey, and covered total oil and gas production on public lands. To complicate matters further, public lands were defined by the Bureau of Land Management and the U. S. Geological Survey to include Indian land. Indian lands are specifically excluded from the definition used in this study. To correct for that part of total oil and gas production originating on Indian lands, increased production on Indian land from 1963 to 1965 (54 percent), plus 1963 total Indian land production, was removed from the 1963 estimate.

Using estimates of total production by county, and estimates of public land production by county which were aggregated into sub-basins, percentage estimates of public land production as shown in table A-1 were derived.^{4/}

^{4/} U. S. Geological Survey, Minerals Yearbook, 1963, Volume III, Area Reports: Domestic.

TABLE A-1

TOTAL GROSS OUTPUT ATTRIBUTABLE TO MINERAL
OUTPUT ON PUBLIC LANDS--1963 AND 1980

(Thousands of Dollars)

	<u>Coal</u>	<u>Oil and Gas</u>
<u>Upper Main Stem</u>		
1963	\$ 3,388.7	\$ 1,656.3
	57%	93%
1980	4,660.9	943.9
<u>Green River</u>		
1963	\$ 45,897.6	\$ 85,857.7
	96%	68%
1980	57,073.9	122,346.9
<u>San Juan</u>		
1963	\$ 22.6	\$ 39,308.8
	11%	23%
1980	76.3	37,111.2

Contribution of Federal Lands to Range Livestock
in the Upper Colorado River Basin

The Range Livestock sector includes both cattle and sheep. A substantial share of feed requirements for the industry are obtained from Bureau of Land Management grazing district allotments, and Forest Service permits, and other leased lands. State and Indian lands are included in the non-Federal category.

Grazing allotments or permits on Federal lands are considered as an integral part of the total ranch resources. Moreover, permits are complementary with feed production on private ranches. Each serves a particular season of the year. Grazing permits thus enhance productivity of ranch

resources, and vice versa. The interrelationship of grazing permits and feed production makes the task of imputing part of the total value of production to grazing permits very difficult. A proportional share of total feed requirements is assumed in this study. The proportion provided by the Federal lands is shown in table A-2 for 1960. For 1980 similar estimates are shown in table A-3.

The figures in table A-3 are based on trends in permits on Federal lands, and livestock capability is reflected in the sub-basin reports. Sheep permits have been declining more rapidly than beef.

TABLE A-2

TOTAL FEED REQUIREMENTS FOR RANGE LIVESTOCK AND THE AMOUNTS PROVIDED BY FEDERAL LANDS, UPPER COLORADO RIVER BASIN, 1960

<u>Sub-Basin</u>	<u>Total Feed Requirements a.u.m.^{a/}</u>	<u>Provided by Federal Lands a.u.m.^{a/}</u>	<u>Percent on Federal Lands</u>
Green River	4,120,860	1,341,490	32.5%
Upper Main Stem	2,744,160	913,350	33.3
San Juan	1,606,600	645,000	40.0

^{a/} Animal unit month. This represents the amount of feed needed to keep a beef cow for one month. Thus, a beef cow is one animal unit. A sheep is considered to be one-fifth of an animal unit.

Source: United States Census; United States Forest Service unpublished data; United States Department of the Interior, Bureau of Land Management, "Statistical Appendix to the Annual Report of the Director, Bureau of Land Management," Washington, D. C., 1960 and unpublished data.

TABLE A-3

TOTAL FEED REQUIREMENTS FOR RANGE LIVESTOCK AND THE AMOUNTS PROVIDED BY FEDERAL LANDS, UPPER COLORADO RIVER BASIN, 1980

<u>Sub-Basin</u>	<u>Total Feed Requirements a.u.m.</u>	<u>Provided by Federal Lands a.u.m.</u>	<u>Percent on Federal Lands</u>
Green River	6,016,450	1,073,190	17.8%
Upper Main Stem	2,922,530	784,460	26.7
San Juan	1,895,800	580,500	31.0

The imputation of total output proportionately to feed was used as the best alternative. The reduction of Range Livestock production in a given year is not necessarily proportional to the reduction in total feed caused by restricting grazing permits. This is because of the seasonal nature of various feed resources.

Contribution of Federal Lands to Forestry
in the Upper Colorado River Basin

Estimating the proportion of the Forestry sector's output attributable to Federal lands was straightforward. National forests contribute most of the timber cut. The relative cut from public lands by sub-basin is indicated in table A-4.

TABLE A-4

PROPORTION OF FORESTRY OUTPUT CUT FROM FEDERAL LANDS,
UPPER COLORADO RIVER BASIN, 1960 AND 1980

<u>Sub-Basin</u>	<u>Proportion of Board Feet Cut from Federal Lands</u>
Green River	93.4%
Upper Main Stem	94.0
San Juan	88.0

There is no particular trend foreseeable in the proportions of timber from public lands by 1980. If a pulp mill were developed, it might alter the proportions. However, no pulp mills appear in the offing. Saw timber only will continue to be utilized.

Expenditures Associated with Outdoor Recreation on Federal Lands

Data on total expenditures for outdoor recreation in the sub-basins of the Upper Colorado River are available for 1960. Unfortunately, the share of this expenditure related to recreation on Federal lands is unreported. Three steps were involved in the estimation of the proportion of outdoor recreation occurring on Federal lands:

1. The PLLRC provided information by sub-basin which indicated the proportion of outdoor recreation occurring on Federal lands, to outdoor recreation occurring on all public lands in 1965. This same proportion is assumed for 1963.
2. Based on information concerning recreational income in the agricultural sector in 1964, an estimate of the proportion of outdoor recreation occurring on private lands to total outdoor recreation in 1960 was obtained. If this proportion is subtracted from one, an estimate of the share of outdoor recreation occurring on all public lands in 1960 is obtained. This same proportion is assumed for 1963.
3. From step one, the proportion of recreation on Federal to all public lands is available; from step two, the proportion of recreation on public to recreation on total land is available. The product of these two estimated ratios gives the proportion of all outdoor recreation occurring on Federal lands.

The second step is the most difficult to achieve. The only data available for private recreational income relate to the agricultural sector. Agricultural income related to recreation is not due to the sale of traditional agricultural products; rather, it pertains to recreation enterprises found

on agricultural land. Dude ranches are the primary activity in this category in the Upper Colorado River Basin.

An adjustment in the data was necessary to account for the fact that not all expenditures on private outdoor recreation accrues to the agricultural sector. Expenditures for gas and auto, other retail, other services, etc., occur outside the agricultural sector. Patterns of expenditures derived in the economic study of the Colorado River Basin suggest that outlays by recreationists to agriculture constitute approximately 47 percent of total recreational expenditures on private land.^{5/} This factor was applied to data on agricultural income derived from recreation to give an estimate of total private expenditures for outdoor recreation during 1964.

Total expenditure data with which the above figures must be compared are for 1960. The 1964 figures were adjusted back to 1960 using the rate of growth of outdoor recreation between 1960 and 1980 as reported in the recreation report.^{6/} These adjusted figures were then used to calculate a percentage figure for expenditures on outdoor recreation on private lands in 1960. The figures for the Green River, Upper Main Stem, and San Juan Sub-basins were 2.73 percent, 4.60 percent, and 1.08 percent, respectively.

^{5/} Paul T. Therkildsen, "Outdoor Recreation in the San Juan and Upper Main Stem Sub-Basins," and Bernard Udis (editor), An Interindustry Analysis of the Colorado River Basin in 1960 with Projections to 1980 and 2010, Appendix Part I-B (Boulder: Bureau of Economic Research, University of Colorado, June 1968), table UMS SJ R-R9, p. 45. This figure represents the sum of eating and drinking and lodging percentages of non-resident outdoor recreationist tourist expenditures (27 and 20 percent, respectively) reported in the San Juan and Upper Main Stem Sub-basins in 1960. The same percentages were assumed to apply for dude ranches and related recreation expenditures in agriculture.

^{6/} Paul T. Therkildsen, "The Economics of Outdoor Recreation in the Green Sub-Basin," and Bernard Udis (editor), op. cit., p. 48, and Therkildsen, "Outdoor Recreation in the San Juan...", op. cit., p. 72.

Given these figures and the share of outdoor recreation on Federal lands relative to all public lands, it was possible to estimate the percentage of all outdoor recreation occurring on Federal lands. These percentages were 83.2, 88.5, and 91.8 percent for the Green River, Upper Main Stem, and San Juan Sub-basins, respectively.

Expenditures in the Upper Colorado River Basin by Industrial Sector Associated with Outdoor Recreation on Federal Land

Once the share of outdoor recreation on Federal lands in each sub-basin is known, it is necessary to allocate these expenditures among the various sectors in the I-O tables. As noted earlier, the recreation section of the Colorado River Basin study provides an estimate of the 1960 expenditures for non-resident outdoor recreationists in the San Juan and Upper Main Stem Sub-basins. Those estimates were also adopted for the Green River Sub-basin and yield the industrial distribution of the expenditures in table A-5 below.

TABLE A-5

TOTAL NON-RESIDENT EXPENDITURES
RELATED TO RECREATION, 1960

	<u>San Juan</u>	<u>Upper Main Stem</u>	<u>Green River</u>	<u>Percent of Total</u>
Service Stations ^{a/}	\$2,663,914	\$ 4,417,026	\$ 4,854,894	28%
Eating and Drinking	2,568,774	4,259,275	4,681,505	27
Other Retail ^{a/}	761,119	1,262,008	1,387,113	8
Lodging	1,902,796	3,155,019	3,467,781	20
Other Services	<u>1,617,376</u>	<u>2,681,766</u>	<u>2,947,614</u>	<u>17</u>
Total	\$9,513,979	\$15,775,094	\$17,338,907	100%

^{a/} Margin expenditures only.

Expenditures of residents in the sub-basin were substantial, but the spending pattern is not likely to be the same as non-residents. Resident expenditures for outdoor recreation in the sub-basins were estimated at four percent of personal consumption expenditures.^{7/} Estimates of 1960 resident expenditures for outdoor recreation were \$6,417,000, \$9,506,000, and \$6,145.8 thousand for the San Juan, Upper Main Stem, and Green River Sub-basins, respectively.^{8/} About one-fourth of resident recreation expenditures are assumed to be spent away from home communities.^{9/} This portion of resident expenditures would be spent in patterns similar to out-of-basin recreationists' expenditures.

The above assumptions provide a basis for estimating total recreation expenditures in 1960 for each sub-basin and for various industrial sectors. To obtain 1963 estimates, the growth rates of outdoor recreation (as estimated in the reports on outdoor recreation) were applied to each sector. The annual growth rates of the total outdoor recreation expenditures are as follows: San Juan, 7 percent; Upper Main Stem, 6 percent; Green River, 3.7 percent.

In order to estimate that portion of these expenditures associated with recreation on Federal lands, the percentage of recreation that occurred on Federal lands in each sub-basin was used. As noted in the previous section, percentages for the San Juan, Upper Main Stem, and Green River Sub-basins were 91.8 percent, 88.5 percent, and 83.2 percent, respectively. Applying these participation rates to total expenditure data, expenditures associated with recreation on public lands were obtained. These estimates by sector are tabulated in table A-6.

If it is assumed that 1980 expenditures by recreationists on public lands follow the same pattern among sectors as in 1963, and that the same ratio will prevail between outdoor recreation on Federal lands and outdoor recreation on all lands, then an estimate of 1980 outdoor recreation

^{7/} See Therkildsen, "Outdoor Recreation in the San Juan...", op. cit., p. 57.

^{8/} Ibid., and Therkildsen, "The Economics of Outdoor Recreation in the Green River Sub-Basin," op. cit., p. 37.

^{9/} Therkildsen, "Outdoor Recreation in the San Juan...", op. cit., p. 56.

TABLE A-6

INDUSTRIAL DISTRIBUTION OF OUTDOOR RECREATION EXPENDITURES
ATTRIBUTABLE TO RECREATION OCCURRING ON THE FEDERAL LANDS

1963

Sector	San Juan		Upper Main Stem		Green River		Totals	
	Dollar	Percent	Dollar	Percent	Dollar	Percent	Dollar	Percent
Service Stations*	\$ 1,079,025	8.7%	\$ 1,597,840	8.7%	\$ 1,279,896	8.4%	\$ 3,956,761	8.6%
Eating & Drinking	5,215,971	42.2	7,720,728	41.9	6,181,616	40.7	19,118,315	41.6
Other Retail*	308,293	2.5	456,411	2.5	365,685	2.4	1,130,389	2.5
Lodging	2,500,545	20.2	3,826,589	20.7	3,502,067	23.0	9,829,201	21.3
Other Services	3,262,079	26.4	4,830,586	26.2	3,874,708	25.5	11,967,373	26.0
Totals	\$12,365,913	100.0%	\$18,432,154	100.0%	\$15,203,972	100.0%	\$ 46,002,039	100.0%

1980

Service Stations*	\$ 3,406,393	8.7%	\$ 4,306,198	8.7%	\$ 2,376,171	8.4%	\$ 10,088,762	8.6%
Eating & Drinking	16,466,119	42.1	20,813,288	41.9	11,476,744	40.7	48,756,151	41.8
Other Retail*	973,255	2.5	1,234,443	2.5	678,906	2.4	2,886,604	2.5
Lodging	7,921,844	20.3	10,334,874	20.8	6,465,772	23.0	24,722,490	21.1
Other Services	10,298,398	26.4	12,918,593	26.1	7,193,171	25.5	30,410,162	26.0
Totals	\$39,066,009	100.0%	\$49,607,396	100.0%	\$28,190,764	100.0%	\$116,864,169	100.0%

* Margin expenditure only.

expenditures associated with Federal lands can be allocated by sector and by sub-basin.

The 1980 estimates of total outdoor recreation expenditures, provided in the recreation section of the Colorado River Basin study, are as follows: San Juan, \$61,639,000; Upper Main Stem, \$81,096,000; Green River \$48,571,000.^{10/} Using the information developed for 1963, total recreational expenditures data were broken down to obtain the industrial and geographical allocations of expenditures associated with recreation on public lands. Those figures for 1980 also appear in table A-6.

Expenditures Associated with Winter Sports Activity on the Federal Lands on the Upper Colorado River Basin

In Colorado Alternative G, efforts have been concentrated on the Upper Main Stem Sub-basin. The main reason is the Upper Main Stem contains by far the largest proportion of winter sports activity in the region of the Upper Colorado River. This sub-basin has been estimated to account for 88 percent of the winter sports activity in the State of Colorado.^{11/} Other winter sports areas in the Upper Colorado Region are located in the Steamboat Springs, Colorado area, in the Green River Sub-basin, and near Durango, Colorado, in the San Juan Sub-basin. There are no major winter recreation areas in those portions of Wyoming, Utah, and New Mexico which lie within the Upper Colorado River Basin.

In the Upper Main Stem Sub-basin all major winter sports areas are located in National Forests^{12/} (see table A-7). Ski visits to public lands and ski visits in the Upper Main Stem are therefore identical.

^{10/} See Therkildsen, "Outdoor Recreation in the San Juan and the Economics of Outdoor Recreation," Ibid.

^{11/} Gerald L. Allen, "Colorado Ski and Winter Recreation Statistics 1968," (Boulder: Business Research Division, Graduate School of Business Administration, University of Colorado, 1968), pp. 25-26.

^{12/} Since the overwhelming share of winter sports visits are for skiing, we shall restrict this analysis to skiing and consider it an acceptable proxy for all winter sports activities.

Given the number of ski visits in the Upper Main Stem for 1963, it was necessary to distinguish between resident and non-resident expenditures before calculating total expenditures. Patterns of expenditure of these two classes of visitors differ appreciably.

TABLE A-7

ALL WINTER SPORTS USER DAYS IN THE UPPER MAIN STEM SUB-BASIN
BY WINTER RECREATION AREA AND NATIONAL FOREST,
1963-1964 SKI SEASON

<u>Ski Area</u>	<u>National Forest</u>	<u>User Days</u>
Berthoud		12,294
Arapahoe Basin	Arapahoe National	72,391
Breckenridge	Forest	63,655
Winter Park		192,840
Mesa Creek- Powderhorn	Grand Mesa-Uncompahgre National Forest	11,920
Crested Butte	Gunnison National Forest	23,179
Monarch ^{a/}	San Isabel National	14,820
Cooper Hill ^{a/}	Forest	13,130
Aspen		153,800
Aspen Highlands	White River National	44,450
Buttermilk	Forest	60,750
Snowmass		491
Vail		<u>94,310</u>
Total User Days		758,030

^{a/} Although the San Isabel National Forest is not considered to be in the Upper Main Stem, its major ski areas are located in the sub-basin and, therefore, have been included.

Source: Allen, op. cit.

A recent study by the Denver Research Institute^{13/} reported that 8.8 percent of skiers interviewed lived within 25 miles of the ski area, our definition of a resident skier (see table A-8). In the analysis it was assumed that 8.8 percent of all skiers reside in the sub-basin, and the remaining 91.2 percent cross sub-basin borders to reach the ski area.

For 1963, it was assumed that all in-basin skiers made trips of one-day duration to ski areas, and incurred expenses of \$11.04 per visit.^{14/} The calculation of total expenditures by in-basin skiers was made as follows: 8.8 percent of total visits for winter sports would be 66,706. When multiplied by \$11.04 per visit, this amounts to approximately \$736,000.

Out-of-basin skiers can be subdivided into Colorado resident and non-Colorado resident. There is evidence these two classes of skiers have different expenditure patterns, and they also differ from those of in-basin skiers. The basic distinction rests upon the duration of the trip and the amount of travel involved. According to the Allen study, 88 percent of all 1963 winter sports visits in Colorado occurred in the Upper Main Stem.^{15/} Of the skiers in Colorado responding to a DRI on-site interview, 36 percent were not residents of Colorado (see table A-8). It is assumed this percentage applies to skiers in the Upper Main Stem and that such out-of-state skiers spent an average of four nights in the sub-basin. Following Harrington^{16/} a trip of such duration will be referred to as a vacation trip. Harrington has estimated the total daily expenditures for vacationing skiers at \$52.44.^{17/} Most people taking such vacation trips are assumed to reside in states other than Colorado. According to the DRI study of Colorado skiers in 1967 and 1968, 94 percent of non-Colorado residents came from areas other than the Rocky Mountain Region (see table A-8).

^{13/} Preliminary results on on-site skier survey 1967-1968, (Denver: Industrial Economics Division, Denver Research Institute, University of Denver, August 12, 1968), hereafter referred to as DRI study.

^{14/} Harrington, op. cit., p. 8.

^{15/} Allen, op. cit., pp. 18-19.

^{16/} Harrington, op. cit., p. 8.

^{17/} Ibid.

TABLE A-8

PLACE OF RESIDENCE OF SKIERS INTERVIEWED

<u>Residence</u>	<u>Percent</u>
No answer	0.1%
Metropolitan Denver (including Boulder)	38.8
Within 25 miles of ski area	8.8
Elsewhere in Colorado	16.3
Other Rocky Mountain States	2.0
Pacific Coast States	3.8
West South Central	2.6
West North Central	8.2
East North Central	10.1
Middle Atlantic States	4.4
New England	2.3
South	1.1
Canada	0.6
Rest of Western Hemisphere	0.6
Rest of World	0.3

Source: Preliminary Results of On-Site Skier Survey, 1967-68, Denver;
Industrial Economics Division, Denver Research Institute,
University of Denver, August 12, 1968.

It is assumed that these out-of-state residents making ski trips of four or more days duration do not travel by automobile, but rather utilize some form of public transportation, the costs of which are incurred largely outside the Upper Main Stem Sub-basin.

The above estimate of daily expenditures by vacationing skiers, \$52.44, includes a transportation element of 17.5 percent.^{18/} In accordance with the conclusion that little or no transport expense is incurred within the basin, this daily expenditure figure was reduced by 17.5 percent to \$43.26.

The following computation shows the derivation of expenditures by out-of-state vacationists.

^{18/} Harrington, op. cit., p. 14.

758,030	(Total visits for winter sports on National Forests--public land, in 1963-64 season)
x 36%	(Percent of visits by out-of-state skiers)
<hr/>	
272,890.80	(Out-of-state ski visitor days)
x \$43.26	(Average daily expenditure)
\$11,805,256.00	(Expenditures for out-of-state ski visits)

Thirty-six percent of total visits for winter sports activities on National Forests were made by out-of-state skiers. This represents 272,890 visits. At \$43.26 per visit (visitor day), total expenditures would be \$11,805,256.

One class of winter sport visitor to the Upper Main Stem Sub-basin remains to be estimated; residents of Colorado who live outside the borders of the Upper Main Stem. This class of visitor is assumed to take overnight, or weekend trips, and who, according to Harrington, spends \$24.84 per day.^{19/} One-half of the transportation expenditures made by this class of recreationist occurs within the sub-basin. This adjustment brings Harrington's expenditure of \$24.84 per day to a daily average expenditure of \$22.87 for the in-state but out-of-basin visitor. Total expenditures by this class of skier utilizing this figure are estimated to be \$9.6 million.

Total expenditures in the Upper Main Stem for the 1963-1964 skiing season are estimated to approximate \$22.1 million. This figure compares with \$23,510,000 reported by Harrington for expenditures in all Colorado in the 1963-1964 season.^{20/}

The assumption made here is that 88 percent of Colorado skiing takes place in the Upper Main Stem. If an 88 percent factor were applied to expenditures as well as to the number of visits, a total expenditure figure of \$20,688,800 would result. Since fashionable resorts in the Upper Main Stem probably draw a larger than proportionate share of visitors

^{19/} Ibid., p. 8.

^{20/} Ibid., p. 74, table 27.

incurring high expenditures, the true figure probably lies in the range bounded by \$20.7 million and \$22.1 million. For purposes of the present study, the \$22.1 million figure was used.

The distribution of skier expenditures between expenditure categories is shown in table A-9.

TABLE A-9

PERCENT OF SKIER EXPENDITURE BY ITEM AND BY TYPE OF TRIP

<u>Item</u>	<u>Single Day^{a/}</u>	<u>Weekend^{b/}</u>	<u>Vacation^{c/}</u>
Lodging and meals	13.4	33.7	35.7
Lift tickets	35.9	20.5	16.1
Rental or repair	7.4	4.3	2.1
Ski school	4.9	2.0	2.6
After ski activities	7.4	14.0	11.7
Equipment	7.1	4.2	6.7
Transportation	22.5	15.9	17.5
Miscellaneous	0.7	0.4	--
"Package plan" trips ^{d/}	0.7	5.0	7.6

a/ Returned home at end of each day.

b/ Were away from home at least one night but not more than three nights.

c/ Were away from home four nights or more.

d/ Some skiers, especially those taking vacation trips, used the "package plan." They were not asked to separate the various items included in the price.

Source: Harrington, op. cit., p.14.

Using this breakdown, a distribution of skier trends developed by Harrington (see table A-10) was used to subdivide expenditures between sectors of the I-O table. Lodging and meals were divided equally, and allocated to Eating and Drinking sector and Lodging sector. Single day trips constitute an exception. All lodging and meals expenditures were assumed to be in the Eating and Drinking sector. Lift ticket, rental and repair expenditures, and ski school expenditures were assigned to Other Services. After-ski activities were divided 80 percent to Eating and Drinking and 20 percent to Other Services. For single day trips, the division was 90

percent to Eating and Drinking and 10 percent to Other Services. Equipment expenditures were allocated to Other Retail sector. Transportation expenditures were allocated as follows: (1) for single day trips all expenditures for transportation to Service Stations, (2) for weekend trips 50 percent went to Service Stations and 50 percent was omitted as consisting of out-of-basin expenses, (3) for vacation trips all expenditures for transportation were considered out-of-basin expenses. Miscellaneous expenditures went to Other Retail sector. "Package plan" trips were excluded from all calculations, with the exception of single day trips. Percentage in "package plan" are reflected in the present breakdowns.

Weekend and vacation trip columns found in table A-9 were obtained by recalculating expenditure breakdowns so percentages would add to 100 percent. This adjustment was necessary because of the elimination of parts of transportation and "package plans." Resulting percentages were applied to the estimate of total expenditures for winter sport activities on public lands to yield the estimates found in table A-10.

Expenditure patterns for 1980, shown in table A-11, were derived by type of visit (i.e., single day, weekend, vacation trip) by multiplying 1963 percentages by a factor of 2.0791. The latter figure represents an estimated annual growth rate of 4.15 percent over 17 years.^{21/}

^{21/} This growth factor for skiing in the Upper Main Stem was derived by halving the 8.3 percent annual growth rate estimated by Harrington for skiing in the West between 1964 and 1976. Between 1955 and 1960 the regional growth rate averaged 12.8 percent. It climbed to 19.9 percent between 1960 and 1964. Harrington's figure of 8.3 percent seems reasonable by past standards. Nevertheless, the inhibiting influence of rather stringent physical fitness requirements, risk of injury, high expense, lengthy travel time, and increasingly crowded slopes may be more pronounced than is suggested in the 8.3 percent rate. No attention was given to the possible influence on the growth rate from the possible scheduling of the 1976 Winter Olympics in Colorado. See Harrington, op. cit., pp. 11, 47.

TABLE A-10

SECTOR DISTRIBUTION OF SKIER EXPENDITURES IN THE UPPER MAIN STEM SUB-BASIN BY LENGTH OF VISIT, 1963

Sector	Single Day Visit		Weekend Visit		Vacation Visit	
	Dollar	Percent	Dollar	Percent	Dollar	Percent
Eating and Drinking	\$ 147,730.92	20.06%	\$ 3,081,406.55	32.20%	\$ 4,285,307.93	36.30%
Lodging	- -	- -	1,846,930.02	19.30	2,809,650.93	23.80
Other Services	365,571.44	49.64	3,253,659.10	34.00	3,647,824.10	30.90
Other Retail*	57,442.73	7.80	507,188.04	5.30	1,062,473.04	9.00
Service Stations *	165,700.19	22.50	880,401.87	9.20	- -	- -
Total	\$ 736,445.28	100.00%	\$ 9,569,585.58	100.00%	\$11,805,256.00	100.00%
Total All Expenditures			\$22,111,286.86			

* Margin expenditures only.

TABLE A-11

SECTOR DISTRIBUTION OF SKIER EXPENDITURES IN THE UPPER MAIN STEM SUB-BASIN BY LENGTH OF VISIT, 1980

Sector	Single Day Visit		Weekend Visit		Vacation Visit	
	Dollar	Percent	Dollar	Percent	Dollar	Percent
Eating and Drinking	\$ 307,147.00	20.06%	\$ 6,406,552.00	32.20%	\$ 8,909,583.00	36.30%
Lodging	- -	- -	3,839,952.00	19.30	5,841,545.00	23.80
Other Services	760,059.00	49.64	6,764,682.00	34.00	7,584,191.00	30.90
Other Retail*	119,429.00	7.80	1,054,495.00	5.30	2,208,988.00	9.00
Service Stations *	344,507.00	22.50	1,830,443.00	9.20	- -	- -
Total	\$1,531,142.00	100.00%	\$19,896,124.00	100.00%	\$24,544,307.00	100.00%
Total All Expenditures			\$45,971,573.00			

* Margin expenditure only.

The underlying assumptions were that visitor patterns remain stable over time, and costs per day of skiing do not change. Percentages reflecting patterns of consumer expenditures were applied to 1980 totals to obtain the 1980 breakdowns in table A-11.

Expenditures Associated with Big Game Hunting on Federal Lands on the Upper Colorado River Basin

The three sub-basins cover parts of four states, and the quality and type of information available for counties in the four states is quite variable. The estimation procedure is discussed separately by state, because of variations in basic data.

Wyoming Counties

In 1965, the Wyoming Game and Fish Department commissioned a study of the impact of fishing and hunting activities in the Wyoming economy.^{22/} Information from this study is basic to the estimation procedure for each state. The report presents estimated 1965 expenditures for hunting and fishing by county, for residents and non-residents.^{23/} The proportion of expenditures attributable to big game hunting (deer, elk, and antelope) was estimated by disaggregating expenditures for the state as a whole.^{24/}

The proportion of expenditures resulting from big game hunting on Federal lands was estimated by assuming that hunting pressure was evenly distributed on all lands. For example, if 70 percent of the land in the county was Federal land, it was assumed that 70 percent of all big game hunting in that county occurred on Federal lands. This introduces a slight bias. The hunting season coincides with colder weather and lower big game range elevations. Because a greater percentage of the lower elevation land is privately owned, expenditures associated with big game hunting may be slightly overestimated. The estimates of expenditures resulting from

^{22/} T. A. Walther and J. W. Birch, Hunting and Fishing What It Means to Wyoming (Cheyenne, Wyoming: Wyoming Game and Fish Department, 1966).

^{23/} Ibid., p. 26.

^{24/} Ibid., table 1, p. 11.

big game hunting on Federal lands for residents and for non-residents were then broken down into the following categories of expenditure: Service Stations, Eating and Drinking, Lodging, Other Retail, and Other Services. This breakdown was based on expenditure patterns reported in the Wyoming study.^{25/}

Those expenditure estimates were projected to 1980 by assuming a three percent annual increase in big game hunting between 1963 and 1980.^{26/} It was also assumed that most residents of Wyoming, who participated in big game hunting in the counties of the Green River Sub-basin, were also residents of these counties. This assumption is supported by the fact that 14 percent of hunting in Wyoming occurs in these counties, and 11 percent of Wyoming's population are residents of these same counties.

Colorado Counties

Each of the three sub-basins includes some Colorado counties. A count is available for each of the sub-basin groupings of counties on the number of deer hunters in 1963 who (1) live in the area, (2) live in those portions of Colorado lying outside the area, and (3) live outside of Colorado. Similar information is available for elk hunting.^{27/} Deer and elk comprise big game hunting in Colorado.

Data from the Wyoming study on hunter expenditures by area of residence and type of game for 1965 were used to convert hunter statistics to expenditure figures.^{28/} The Wyoming data were then deflated to 1963 dollars. People who lived outside the sub-basin and hunted in the sub-basin were assumed to have made 40 percent of their total expenditures in the sub-basin.^{29/}

^{25/} Ibid., tables II, III, and IV, pp. 11, 12.

^{26/} J. B. Kline, "Working Paper Number 10: Recreation," Western Mountain Region Study (Boulder: Business Research Division, Graduate School of Business Administration).

^{27/} Unpublished data supplied by the Colorado Game and Fish Department.

^{28/} Walther, op. cit., table 13, p. 20.

^{29/} Paul T. Therkinden, "The Economics of Outdoor Recreation in the Green River Sub-Basin," and Bernard Udis (editor), An Interindustry Analysis of the Colorado River Basin in 1960 with Projections to 1980 and 2010 (Boulder: Bureau of Economic Research, University of Colorado, June, 1968), table GR-R20, p. 55.

Gross expenditures for Colorado counties were then projected to 1980, broken down into expenditure categories, and allocated to Federal lands in the same manner as the Wyoming data.

Utah and New Mexico Counties

No data for hunting big game in Utah and New Mexico counties were found. The total number of acres of Federal land in Utah, New Mexico, and Colorado, in each sub-basin, is known, however. It was assumed that hunting pressure on Federal lands was approximately the same in Utah and New Mexico as in Colorado for each sub-basin. It was also assumed that expenditure patterns for hunting on Federal lands in Utah and New Mexico were the same as for Colorado.

Using the above assumptions, estimated expenditures for each sub-basin in Colorado were adjusted to derive corresponding expenditure estimates for Utah and New Mexico.

The estimated expenditures in 1980 resulting from big game hunting on Federal lands by sub-basin, and by I-O industry class, are shown in table A-12.

big game hunting on Federal lands for residents and for non-residents were then broken down into the following categories of expenditure: Service Stations, Eating and Drinking, Lodging, Other Retail, and Other Services. This breakdown was based on expenditure patterns reported in the Wyoming study.^{25/}

Those expenditure estimates were projected to 1980 by assuming a three percent annual increase in big game hunting between 1963 and 1980.^{26/} It was also assumed that most residents of Wyoming, who participated in big game hunting in the counties of the Green River Sub-basin, were also residents of these counties. This assumption is supported by the fact that 14 percent of hunting in Wyoming occurs in these counties, and 11 percent of Wyoming's population are residents of these same counties.

Colorado Counties

Each of the three sub-basins includes some Colorado counties. A count is available for each of the sub-basin groupings of counties on the number of deer hunters in 1963 who (1) live in the area, (2) live in those portions of Colorado lying outside the area, and (3) live outside of Colorado. Similar information is available for elk hunting.^{27/} Deer and elk comprise big game hunting in Colorado.

Data from the Wyoming study on hunter expenditures by area of residence and type of game for 1965 were used to convert hunter statistics to expenditure figures.^{28/} The Wyoming data were then deflated to 1963 dollars. People who lived outside the sub-basin and hunted in the sub-basin were assumed to have made 40 percent of their total expenditures in the sub-basin.^{29/}

^{25/} Ibid., tables II, III, and IV, pp. 11, 12.

^{26/} J. B. Kline, "Working Paper Number 10: Recreation," Western Mountain Region Study (Boulder: Business Research Division, Graduate School of Business Administration).

^{27/} Unpublished data supplied by the Colorado Game and Fish Department.

^{28/} Walther, op. cit., table 13, p. 20.

^{29/} Paul T. Therikildsen, "The Economics of Outdoor Recreation in the Green River Sub-Basin," and Bernard Udis (editor), An Interindustry Analysis of the Colorado River Basin in 1960 with Projections to 1980 and 2010 (Boulder: Bureau of Economic Research, University of Colorado, June, 1968), table GR-R20, p. 55.

Gross expenditures for Colorado counties were then projected to 1980, broken down into expenditure categories, and allocated to Federal lands in the same manner as the Wyoming data.

Utah and New Mexico Counties

No data for hunting big game in Utah and New Mexico counties were found. The total number of acres of Federal land in Utah, New Mexico, and Colorado, in each sub-basin, is known, however. It was assumed that hunting pressure on Federal lands was approximately the same in Utah and New Mexico as in Colorado for each sub-basin. It was also assumed that expenditure patterns for hunting on Federal lands in Utah and New Mexico were the same as for Colorado.

Using the above assumptions, estimated expenditures for each sub-basin in Colorado were adjusted to derive corresponding expenditure estimates for Utah and New Mexico.

The estimated expenditures in 1980 resulting from big game hunting on Federal lands by sub-basin, and by I-O industry class, are shown in table A-12.

TABLE A-12

ESTIMATED EXPENDITURES RESULTING FROM BIG GAME HUNTING
ON FEDERAL LANDS, BY SUB-BASIN AND CATEGORY, 1980
(1963 Dollars at Producers' Prices)

<u>Sub-Basin and Expenditure Category</u>	<u>By Sub-Basin Residents</u>	<u>By Non-Sub-Basin Residents</u>	<u>Total Expenditure</u>
<u>Upper Main Stem</u>			
Service Stations*	\$ 311,193	\$ 310,026	\$ 621,225
Eating & Drinking	334,468	679,663	1,014,131
Lodging	24,936	145,339	170,275
Other Retail*	224,197	189,751	413,948
Other Services	80,563	804,919	885,482
Total	\$ 975,357	\$2,129,698	\$3,105,061
<u>San Juan</u>			
Service Stations*	\$ 394,769	\$ 216,573	\$ 611,342
Eating & Drinking	417,021	773,807	1,190,828
Lodging	31,255	195,682	226,937
Other Retail*	276,504	104,837	381,341
Other Services	102,073	1,351,644	1,453,717
Total	\$1,221,622	\$2,642,543	\$3,864,165
<u>Green River</u>			
Service Stations*	\$ 249,431	\$ 429,745	\$ 679,176
Eating & Drinking	265,908	1,320,074	1,585,982
Lodging	19,858	336,113	355,971
Other Retail*	76,774	229,942	306,716
Other Services	65,571	1,568,595	1,634,166
Total	\$ 677,542	\$3,884,469	\$4,562,011

* Margin expenditure only.

APPENDIX A-2

THE DERIVATION OF OUTPUTS AND EXPENDITURES ASSOCIATED WITH PUBLIC LANDS IN WASHINGTON STATE

Intensive Agriculture, Fuel, and Non-Fuel Minerals

Examination of Federal agency reports, various laws relating to permitted agricultural uses of public lands, and the Public Land Law Review Commission's Intensive Agriculture study indicate insignificant agricultural outputs from Federal lands in Washington. Minor rentals are derived from agricultural uses, but no output data are available.

Based on the value of rentals, public land production would be negligible relative to total state agricultural production. Therefore, it is assumed here for analytical purposes that no intensive agricultural production takes place on public lands.

Data concerning the total output of all mineral production in the State of Washington are found in the Bureau of Mines 1963 Minerals Yearbook. Department of the Interior records (U. S. Geological Survey) indicate no leasable mineral production occurred in Washington during 1963. It is possible that some locatable minerals were produced on claims located on public lands. For purposes of the present study, this is considered as private production; the claim is subject to patent. For these reasons, no fuel, or non-fuel mineral production was determined to have taken place on public lands in 1963.

In the absence of any major agriculture or minerals policy changes, no output of intensive agriculture, or fuel or non-fuel minerals are assumed to occur on public lands in the State of Washington by 1980.

Forage--the Livestock Sector

The allocation of 1963 forage output to public and private lands is based on the relative share of grazing in animal unit months (a.u.m.) for beef, sheep, and goats. Total grazing requirements were determined on the basis of adjusted livestock inventory for 1963. It was estimated that 1.38 percent of cattle grazing, and 2.5 percent of sheep grazing took place on public lands in Washington.

Livestock and Livestock Products output for Washington in 1964 is estimated at \$255.6 million. Of this, \$142.4 million is attributed to Livestock and Livestock Products.^{30/} Livestock output is further broken down to cattle output, \$127.9 million, and sheep output, \$3.9 million. Applying the percentages of public forage noted above, \$1.76 million of cattle output is attributable to public land grazing permits. Slightly less than \$0.1 million of total sheep output could be attributed to Federal grazing permits. Total Washington Livestock and Livestock Products in 1963 attributable to Federal grazing permits was estimated to be \$1.9 million.

Professor Eldon Weeks of the Department of Agricultural Economics, Washington State University, has estimated that grazing will decline in relative importance. It will remain at about the same absolute level of activity in 1980 as it was in 1963. Based on this projection, Federal grazing permits are assumed here to support \$1.8 million of output in the Livestock and Livestock Products sector in 1980.

Timber

Total 1963 timber cut was allocated between public and non-public on the basis of timber volume harvested by ownership class. The 1963 harvest by ownership is presented in table A-13. Cut by ownership class was valued at a weighted average of \$18.50 per thousand board feet for public timber and \$23 per thousand board feet for private timber. Federal timber was valued at the lower price because of composition of cut by species, lower quality, more difficult access, rougher terrain, etc. Using these data, 29.6 percent of total timber value derives from public lands.

^{30/} U. S. Bureau of Census, 1964 Census of Agriculture.

TABLE A-13

TIMBER HARVESTED BY OWNERSHIP, WASHINGTON--1963

	West Wash. (MBF)	East Wash. (MBF)	(MBF) Public Lands ^{a/}
<u>Private</u>			
Live	1,808,815	277,550	
Dead	846,517	1,666	
<u>State</u>			
Live	386,166	39,088	
Dead	120,621	147	
<u>Bureau of Land Management</u>			
Live	0	143	143
Dead	0		
<u>National Forests</u>			
Live	1,096,800	404,600	1,501,400
Dead	74,600	7,325	81,925
<u>Indian Land</u>			
Live	124,441	210,672	
Dead	2,300	1,120	
<u>Other Public</u>			
Live	13,276	2,041	
Dead	8,090		
<u>Other Federal Agencies</u>			
Live	1,531	0	1,531
Dead	122	0	122
<u>Total Production</u>			
Live	3,431,029	934,144	
Dead	1,052,310	10,258	
<u>Grand Total</u>	4,483,339	944,372	1,585,121
Live Only	3,431,029	934,144	1,504,374
<u>Total: Both Regions</u>	5,427,711		1,585,121 or 29.2%

a/ As defined in P.L. 88-606, 78 Stat. 982.

Source: 1963 Washington Timber Harvest, Forest Service, U. S. Department of Agriculture, Pacific Northwest Forest and Range Experiment Station.

Given no substantial changes in public land management policy, the division of public and non-public timber in 1980 will remain approximately the same as in 1963.^{31/}

Recreation

Basic sources of information on recreation in the State of Washington are the Bonneville Power Administration (BPA) and the Washington State Department of Commerce and Economic Development.^{32/} Based on these studies, an estimate of 26.7 percent was developed for the percentage of total recreation expenditures in the State of Washington associated with public lands. The travel study indicated that 44.9 percent of all travel expenditures were related to recreation. Applying these percentages to out-of-state, and in-state travel expenditures noted in the BPA report, non-resident expenditures associated with recreation on public lands in 1963 were estimated to be \$30.1 million. Resident expenditures associated with recreation on public lands were \$38.0 million in 1963.

To obtain 1980 projections it was assumed that recreation expenditures would increase by 137 percent between 1963 and 1980.^{33/} The 1980 base projections are thus \$71.3 million for non-residents, and \$90.1 million for residents.

Total expenditures were allocated among the sectors according to the sectoral breakdown provided in the BPA report.^{34/} It should be noted that sectors used in the BPA report do not correspond to the sectors used in the Washington I-O tables. This is due to the gross margin treatment of Trade and Service sectors in input-output analysis.

^{31/} Donald R. Gedney, Carl A. Newport, Dwight Hair, Pacific Northwest Economic Base Study, U. S. Department of the Interior, Bonneville Power Administration, Vol. II, p. 6, Forest Industries, 1966.

^{32/} See Myron Katz, "Recreation," contained in Pacific Northwest Economic Base Study for Power Markets, Volume II, Part 9, 1967, U. S. Department of the Interior, Bonneville Power Administration; Non-Resident Travel in Washington 1959 to 1960, prepared by the Washington State Department of Commerce and Economic Development, Business and Economic Research Division, May 1961.

^{33/} See BPA, op. cit., p. 100, table 29.

^{34/} Ibid., p. 63, table 9.

Expenditures for food were allocated among the Agricultural industries, the Food and Kindred Products industries, and the Personal Services industries. Similarly, transportation expenditures were allocated among Public Transportation and Automobile Transportation. Expenditures for Automobile Transportation then had to be allocated between Service Stations, which are included in Personal Services, and Petroleum Refining. Margin adjustments were also made for other retail purchases.

It was assumed for the 1980 base projections the recreation expenditure pattern of 1980 would be the same as 1963. These expenditure estimates are tabulated in table A-14.

TABLE A-14

EXPENDITURES RELATED TO RECREATION ON PUBLIC LANDS
WASHINGTON STATE, 1963-1980
(Millions of 1963 Dollars at Producers' Prices)

<u>Sector</u>	<u>1963</u>		<u>1980</u>	
	<u>Resident</u>	<u>Non-Resident</u>	<u>Resident</u>	<u>Non-Resident</u>
Other Agriculture, Fishing & Mining	\$ 1.0	\$ 0.8	\$ 2.4	\$ 2.0
Food & Kindred Prod.	11.5	9.1	27.2	21.5
Petroleum Refining	4.3	3.4	10.1	8.0
Other Non-Durable Mfg.	3.4	2.7	8.0	6.4
Other Durable Mfg.	0.8	0.6	1.9	1.3
Transportation, Commu- nication & Public Utilities	1.7	1.4	4.0	3.3
Wholesale & Retail Trade	7.7	6.1	18.3	14.4
Services	<u>7.6</u>	<u>6.0</u>	<u>17.9</u>	<u>14.3</u>
Total	\$38.0	\$30.1	\$89.8	\$71.2
Grand Total	\$68.1		\$161.0	

APPENDIX A-3

PUBLIC LAND RELATED OUTPUTS AND EXPENDITURES IN THE UNITED STATES

Intensive Agriculture

Intensive Agriculture on public lands in the United States is negligible, as indicated by examination of Federal agency reports, various laws relating to permitted uses of public lands, and the Public Land Law Review Commission's Intensive Agriculture study. Table A-15 indicates the maximum acreage of public lands used for cultivation or agriculture in 1966 by state, and by public agency. With a maximum of 147,000 publicly owned acres as compared to more than 1.1 billion total acres devoted to cultivation or agriculture in the United States, it is reasonable to omit this activity from the analysis. Moreover, in the absence of any major public policy changes the same situation should be true in 1980.

Forage--Livestock and Products

In 1963, total feed requirements for cattle and sheep in the United States amounted to an estimated 796,253,000 animal unit months.^{35/} Of that, 735,960,000 went to cattle output, and 60,293,000 went to sheep. Federal grazing permits in 1963 supported 2.25 percent of total cattle feed requirements, and 8.34 percent of total sheep requirements. Federal grazing permits accounted for 2.72 percent of feed requirements for both cattle and sheep combined in the year 1963.

Table A-17 indicates that total Livestock and Products in 1964 was \$18,841,000,000. Cattle and sheep production contributed 45 percent of total Livestock and Products output, or \$8,516,000,000. Livestock and Livestock Products

35/ See table A-16.

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TABLE A-15

MAXIMUM ACREAGE OF PUBLIC LANDS USED FOR CULTIVATION OR AGRICULTURE - 1966* (Acres)

State	Bureau of Land Mgmt.	Forest Service	Navy	Army	Corps of Engineers	Total
Alabama		59		1,160	112	1,331
Alaska		28				28
Arizona		171				171
Arkansas		489		320	29,333	30,142
California		285	28,043	1,313	9,025	38,666
Colorado		1,038			432	1,470
Florida		178	21		65	264
Georgia		400				400
Idaho	30	609				639
Illinois		364				364
Indiana **		196				196
Iowa					7	7
Kansas				20,557		20,557
Kentucky		82				82
Louisiana		371				371
Michigan		60				60
Minnesota		105				105
Mississippi		652		35		687
Missouri		691			75	766
Montana	120	635		138		893
Nebraska		191		20	10	221
Nevada		15	6,660			6,675
New Hampshire		2				2
New Mexico		97				97
North Carolina		485				485
North Dakota					10,291	10,291
Ohio **						
Oklahoma				13,060	1,473	14,533
Oregon		366		160	101	627
Pennsylvania		4				4
South Carolina		1,459				1,459
South Dakota		590		1,201	9,380	11,171
Tennessee		57				57
Texas		225				225
Utah	75	232		1,219		1,526
Vermont		1				1
Virginia		136				136
Washington		50		151	960	1,167
West Virginia		175				175
Wisconsin		117		553		670
Wyoming	100	103				203
Total All States	325	10,718	34,724	39,887	61,270	146,924

*The acreage shown is the maximum acreage of Public Lands potentially used for agricultural purposes rather than the actual acreage. The agricultural acreage reported by each agency does not specify category of land (public domain, acquired, etc.). The figures in this table are the totals reported by each agency, except where the agency did not manage sufficient acreage of Public Lands (Section 10 Lands) in a specific state. Where this was the case, the lower acreage representing the agency Section 10 Lands by state is reported in this table. There is no assurance, however, that this Section 10 Land was the actual acreage in agricultural use.

**Total average for Indiana and Ohio combined.

Agency	Land Classification	Animal Unit Month (Thousands)		
<u>Section 10 Lands</u> <u>Forest Service</u>		Cattle	Sheep	Total
	National Forest	5,228.5	1,169.6	6,398.1
	National Grassland	1,002.6	57.4	1,060.0
	Wilderness	112.4	19.7	132.1
	Primitive Area	102.0	21.6	123.6
Interior	National Park Service	54.4	11.0	65.4
	BLM - Grazing District	7,784.0	2,917.0	10,701.0
	BLM - Section 15	1,114.0	443.0	1,557.0
	BLM - Other Agency Withdrawn	316.0	159.0	475.0
	BLM - AEC Public Domain	18.0	10.0	28.0
	BLM - AEC Acquired	10.0	2.0	12.0
Defense		78.0	22.8	100.0
Total Section 10 Land A.U.M's		16,576.3	5,034.5	21,610.8
Total Requirements for the United States		735,960.0	60,293.0	796,253.0
Percent Contributed by Section 10 Lands		2.25%	8.34%	2.72%
Non-Section 10 Lands (Federally Owned)		620.2	58.5	678.7
<u>Total All Public Lands</u> (Both Section 10 and Non-Section 10)		17,196.5	5,093.0	22,289.5
Percent of U.S. Total Requirements Contributed from All Federal Lands		2.32%	8.45%	2.80%

TABLE A-17

TOTAL LIVESTOCK AND PRODUCTS - U.S. 1964 (Thousands of Dollars)

Commodity	Value of Products Sold
Livestock Products Except Dairy and Poultry	\$11,140,828
Poultry Products	3,062,914
Dairy Products	4,637,292
Total Livestock Products	18,841,024
Cattle	6,030,124
Calves	2,132,083
Total Cattle and Calves	8,162,207
Sheep and Lambs	354,270
Wool	99,853
Hogs and Pigs	2,334,455

Source: U.S. Department of Commerce, Bureau of Census, 1964 Census of Agriculture, Vol.II,Ch.6

output supported by the sale of Federal grazing permits would represent 1.2 percent of the total or \$327 million.

No change is anticipated in the absolute level of Livestock and Livestock Products output supported by the sale of Federal grazing permits in 1980. Increased production will probably be largely supported by feed supplied from intensive agriculture. By 1980 the relative importance of Federal grazing permits is expected to fall to 0.9 percent of Livestock and Livestock Products output. The total output of this sector is projected at \$37,438 million in 1980. That portion supported by Federal grazing would therefore be 0.9 percent of the total.

Forestry

Total timber harvest in the United States in 1963 was about 48.4 billion board feet. About 12.1 billion board feet were harvested from public lands.^{36/} Public timber harvest accounted for 24.9 percent of total U. S. harvest. Assuming the value of public timber is generally less than private timber, due to problems of accessibility, poorer quality, etc., the public share of the harvest in terms of value was about 22.35 percent. Total output of the Forestry industry directly attributable to public lands was assumed to be the latter percentage, or \$428 million of a total \$1,911 million in 1963.

The same proportion of public and non-public timber harvests is expected to occur in 1980, although regional shifts in dependency on public timber are likely to occur. Public timber is expected to support \$644 million of a projected total 1980 Forestry output of \$2,877 million.

Fuel Minerals

In 1963 the total production of Fuel Minerals was \$13,296,000,000 (table A-18). Leasable fuel minerals from public lands accounted for \$1,038 million, of which \$1,010

^{36/} U. S. Department of Agriculture, Forest Service, "Timber Trends in the United States," Forest Resource Report No. 17.

million was Oil and Gas, or 7.8 percent of total output. Because of significant oil discoveries in Alaska, public production of Fuel Minerals as a percent of total may increase. Data concerning these discoveries are not sufficiently reliable to alter the assumption used here that output of leasable minerals from public lands in 1980 will not be significantly different than in 1963. Overall, public output of Fuel Minerals is projected to be \$1,724 million of a 1980 projected total of \$22,106 million.

Non-Fuel Minerals

In 1963 total production of Non-fuel Minerals was \$6.324 billion. Leasable non-fuel minerals from public lands accounted for \$148.4 million of this, or 2.35 percent of the total (table A-18). Since there is little evidence this share will be any different in 1980, public production of Non-fuel Minerals is assumed to be the same percentage in 1980. This means that public output of Non-fuel Minerals should be \$181 million of a 1980 total of \$7,529 million.

TABLE A-18

U. S. FUEL AND NON-FUEL PRODUCTION: TOTAL AND PUBLIC (Millions of 1963 Dollars at Producers' Prices)

<u>Mineral</u>	<u>Total</u>	<u>Public Lands</u>	<u>Public Production As a % of Total</u>
Fuel Minerals	\$13,296.0	\$1,038.1	7.82%
Coal	2,266.8	27.9	1.23
Oil	7,966.7	800.9	10.05
Gas	3,127.0	209.3	6.68
Other	35.5	--	--
Non-Fuel Minerals	6,324.2	148.4	2.35
Uranium	119.0*	2.3	1.93*
Other	6,205.0*	146.1	2.35*

*Mine Value.

Source: Department of the Interior, Geological Survey, "Annual and Accrued Mineral Production, Royalty Income and Related Statistics," Calendar Years 1958-1963.

Recreation

Total recreation expenditures in the United States in 1963 were estimated at \$21.9 billion.^{37/} These expenditures represent approximately 5.5 percent of total disposable income, or 3.7 percent of gross national product for 1963. To determine the share of recreation expenditures associated with outdoor recreation on public lands it was necessary to derive an expenditure estimate for each visit. On the basis of the BPA report, the average expenditure per visit, per day, for all types of visits is approximately \$6.50.^{38/}

According to unpublished Bureau of Outdoor Recreation summary data, in 1963 total visits of all types to public lands in the U. S. numbered 448.1 million. Assuming the daily expenditure estimate for Washington is representative of the U. S., total expenditures associated with outdoor recreation on public lands in the United States would be \$2.9 billion in 1963. This represents 13.2 percent of total outdoor recreation expenditures, or 0.5 percent of total GNP.

Between 1963 and 1980 recreation expenditures are expected to grow more rapidly than gross national product. An increasing share of disposable income is devoted to leisure time, and very likely to outdoor recreation. Expenditures associated with outdoor recreation on public lands should increase about 140 percent between 1963 and 1980. (Refer to table A-19.)

Two steps are involved in allocating recreation expenditures among industries. The first is to determine types of expenditures which make up the total. These include food, lodging, transportation, etc. The second step is to make the breakdowns obtained from the first step comparable to the sector definitions employed in input-output analysis.

^{37/} Myron Katz, "Potential for the Recreation and Tourist Industry in the Pacific Northwest," Pacific Northwest Economic Base Study for Power Markets, Volume II Part 9, U. S. Department of the Interior, Bonneville Power Administration, 1967, pp. 18 and 100.

^{38/} Ibid., p. 60.

The average United States recreationist spends 22.4 percent of his dollar for lodging, 26.6 percent for food and meals, 23.7 percent for transportation, and 27.2 percent for other purposes.^{39/} Assuming these percentages will apply in 1980, expenditures by type in 1963 and 1980 were developed (table A-19).

TABLE A-19

RECREATION EXPENDITURES ASSOCIATED WITH PUBLIC LANDS
IN THE U. S. BY CATEGORY, 1963 AND 1980
(Millions of 1963 Dollars at Producers' Prices)

<u>Expenditure Category^{a/}</u>	<u>1963</u>	<u>1980</u>
Food	\$ 771	\$1,862
Lodging	653	1,561
Transportation	687	1,652
Other ^{b/}	<u>789</u>	<u>1,895</u>
Total	\$2,900	\$6,970

^{a/} Source of direct purchase. These expenditure data are not directly comparable with sector margin entries in the U. S. input-output tables.

^{b/} Includes manufactured commodities and services not shown in the other three types of expenditure.

In order to make the estimates consistent with standard input-output interpretations, gross margins were treated as follows. Twenty percent of food expenditures were allocated to Trade industry, and 80 percent was allocated to Food and Kindred Products. All lodging expenses were allocated to the Services sector.

No reliable data are available to divide transportation expenditures between public transportation and transportation by private automobile. One study is available which indicates most travel expenditures involve the

^{39/} See "Tourism and Recreation: A State of the Art Study," U. S. Department of Commerce, Economic Development Administration, p. 30.

automobile.^{40/} Based on this information, it is assumed that 75 percent of all transportation expenditures are associated with automobile travel. The remaining 25 percent is devoted to public transportation such as air, rail, and bus.

The latter 25 percent was allocated to Transportation, Communication, Public Utilities industry. Twenty percent of the remaining expenditures were allocated to Service Stations and 80 percent to Petroleum Refining. Other expenditures no doubt include services and purchases of a variety of manufactured goods. The division between these two is not known, hence it was assumed that all other expenditures were for manufactured commodities, 20 percent in the Trade sector, and 80 percent in Manufacturing. This breakdown gives a general impression of how total recreation expenditures were spent throughout the economy. A completely accurate breakdown would show expenditures for Agriculture and Livestock, Construction, Finance, Insurance, Real Estate, Government Enterprises, etc.

Government Employment Attributable to Public Lands

Although estimates of Federal civilian employment directly related to the ownership and management of public lands is not available for either of the study regions, some information is available at the national level. To obtain an estimate of Federal civilian employment related to public lands, employment of major public land agencies were tabulated as shown in table A-20. Since all Federal agencies cannot be related functionally with specific lands, some of the divisions made there were necessarily arbitrary. A total of 45,058 for the year 1963 was obtained. The 1965 employment estimates are included for the reader's benefit.

^{40/} See "Non-Resident Travel in Washington, 1959 to 1960," Washington State Department of Commerce and Economic Development, Business and Economic Division, May 1961, Appendix A.

TABLE A-20

FEDERAL EMPLOYMENT IN FEDERAL AGENCIES
 PRIMARILY RELATED TO PUBLIC LANDS - 1963 & 1965

Agency or Department	Average Number of All Employees	
	1963	1965
<u>Department of Agriculture</u>		
Forest Service - Total	25,049	26,667
Forest Protection and Utilization	18,191	18,194
Forest Roads and Trails	4,539	5,915
Acquisition of Lands in Natural Forest	6	4
Assistance to States in Tree Planting	15	14
Brush Disposal	1,053	990
Other Permanent Appropriations	1	3
Working Capital Funds	1,244	1,240
Intragovernmental Funds	---	307
<u>Department of Interior</u>		
Bureau of Land Management - Total	4,020	4,012
Management of Lands and Resources	3,775	3,575
Construction and Maintenance	34	53
O. & C. Grant Lands	117	136
Roads and Trails	---	89
Range Improvements	56	88
Permanent Appropriations	---	6
Intragovernmental Funds	38	65
Geological Survey	4,088	4,298
Surveys, Investigations and Research - 1/2 of Total	4,088	4,298
Bureau of Mines	1,285	2,270
Conservation and Development of Mineral Resources - 1/2 of Total	1,285	2,270
Bureau of Commercial Fisheries	467	974
Management and Investigation of Resources - 1/2 of Total	467	974

TABLE A-20 (cont)

FEDERAL EMPLOYMENT IN FEDERAL AGENCIES
 PRIMARILY RELATED TO PUBLIC LANDS - 1963 & 1965

Agency or Department	Average Number of All Employees	
	1963	1965
<u>Department of Interior (continued)</u>		
<u>Bureau of Sports Fisheries and Wildlife - Total</u>	3,558	4,068
Management and Investigations of Resources	2,674	3,080
Construction	31	153
General Administrative Expense	145	152
Migratory Bird Conservation	186	227
Federal Aid in Fish Restoration and Management	41	35
Federal Aid in Wildlife Restoration	85	92
National Wildlife Refuge Fund	108	99
Intragovernmental Funds	288	230
<u>Park Service - Total</u>	6,591	7,156
Management and Protection	2,832	3,027
Maintenance & Rehabilitation of Physical Facilities	2,386	2,579
Construction	592	698
Parkway and Road Construction	393	548
General Administrative Expense (Dept. & Regional Offices)	179	186
Miscellaneous Permanent Appropriations	3	3
Intragovernmental Funds	206	205
<u>GRAND TOTAL - ALL AGENCIES</u>	45,058	49,445
<u>Total Number of Permanent Positions^{1/} 1965</u>		
Forest Service	17,827	18,721
Bureau of Land Management	3,160	3,347
Geological Survey (1/2 of Total)	3,668	3,905
Bureau of Mines (1/2 of Total)	2,213	2,255
Bureau of Commercial Fisheries (1/2 of Total)	831	911
Bureau of Sports Fisheries and Wildlife	3,281	3,664
Park Service	4,862	5,182
<u>GRAND TOTAL - PERMANENT POSITIONS</u>	35,842	37,985

^{1/} Number of permanent positions net of lapses and positions abolished during the year. Permanent positions are those of a full time nature which are of indefinite duration. Some are filled by persons with temporary appointments. Other positions include those of a temporary nature (a year or less), part time jobs (less than a full workweek), and intermittent employment (occasional employees).

SOURCES: The Budget of the United States Government, Fiscal Year Ending June 30, 1965, Appendix. Parts I & III; The Budget of the United States Government, Fiscal Year Ending June 30, 1967, Appendix. Parts I & III.

APPENDIX B

SUPPLY CONSTRAINED INDUSTRIES

Theoretical, Empirical, and Technical Aspects

The quantity of any commodity sold in the market is jointly determined by two factors; demand and supply. The basic methodology underlying the analysis of policy changes in the present study is based on the assumption that demand conditions remain constant and the public sector initiates policy changes which change supply. The impact of various public policy alternatives is evaluated by determining the effects of changing the supplies of various public resources. Input-output analysis was the means of estimating changes in demand that resulted from changing the supply of inputs into the production process.

Occasionally, it was necessary to analyze situations where the supply of a particular resource constrained the output of that (those) industry(ies) to which the resource was an important input. The standard input-output technique is concerned with determining those levels of total output necessary to satisfy a certain schedule of final demands. Where the total output, rather than final sales, of an industry is fixed, however, slight modifications of the standard solution technique are required. In the sections that follow, the standard input-output and supply-constrained solutions are presented, followed by two examples demonstrating the ways in which the supply-constrained solution may be used.

Standard Input-Output Solution

The standard input-output problem involves two basic assumptions: (1) technological coefficients are fixed, and (2) technological coefficients for at least one industry

must sum to less than unity.^{1/} To realize fully the effects of any change in input-output specifications (a policy change, for example), the elasticity of supply of each input must be infinite.

Consider an economy which consists of "n" industries, each selling to other industries, final markets, or both. Each industry purchases from other industries, households, outside markets, or a combination of all three. The technology of the economy is described by:

$$(1) \quad A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & & a_{2n} \\ \vdots & & \ddots & \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}$$

where A represents the total technological coefficients matrix and a_{ij} represents the value of input the j-th industry requires from the i-th industry, in fractional dollars, necessary to produce one dollar's worth of output. For example, a_{11} represents the amount of intra-industry purchases necessary to produce one dollar's worth of output of the first industry, and a_{21} represents how much the first industry must purchase from the second industry to produce one dollar's worth of output, etc.

The economy is presented with a set of final demands:

$$(2) \quad F = \begin{bmatrix} F_1 \\ F_2 \\ \vdots \\ F_n \end{bmatrix}$$

^{1/} The latter assumption insures a non-explosive system, and is in accordance with the Hawkins-Simons conditions. The former assumption may be violated if the analyst has sufficient evidence on which to base coefficient changes resulting from technological, relative price, and other economic changes.

where F denotes a column matrix, and F_1 represents the sales to final markets made by the first industry. F_2 is final markets sales which the second industry makes, etc.

To meet these final demands each industry must supply its final demand as well as all other industry requirements. The latter includes intra- as well as interindustry sales. The total output of an industry is equal to:

$$(3) \quad X_i = F_i + \sum_{j=1}^n a_{ij} X_j \quad i = 1, 2, \dots, n$$

For the entire economy, in generalized form,

$$(3a) \quad X = F + AX$$

where,

$$(4) \quad X = \begin{bmatrix} X_1 \\ X_2 \\ \vdots \\ X_n \end{bmatrix} .$$

In equations (3), (3a), and (4), X represents a column matrix of total outputs for the economy, and X_i and X_j represent the total output of an individual industry. Equation (3a) may be rearranged to solve for X :

$$(5) \quad X = (I-A)^{-1}F$$

where the $(I-A)^{-1}$ matrix becomes the direct and indirect requirements matrix. The elements of the latter matrix are noted with the letter "r." In the expanded form:

$$(6) \quad (I-A)^{-1} = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1n} \\ \vdots & r_{21} & r_{22} & \ddots & \vdots \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ r_{n1} & \cdots & \cdots & \cdots & r_{nn} \end{bmatrix}$$

For example, r_{11} is read "total dollar output of the first industry necessary to supply one dollar of the first industry's final sales." Similarly, r_{12} indicates the dollar requirements of the first industry necessary to supply one dollar of the second industry's final sales.

Supply-Constrained Solution

It is generally true that X , the economy's total output, or X_i , the output of an individual industry, cannot expand indefinitely because of the scarcity of one or more of its inputs. It was necessary to develop a technique capable of determining the output of one or more industries which are constrained by resource limitations, and a method to solve the remaining outputs using the input-output technique.

The approach is as follows. The algebraic solution of the output of industry "i" is:

$$(7) \quad X_i = \sum_{j=1}^n r_{ij} \cdot F_j \quad (i = 1, \dots, n)$$

In the standard problem, the r_{ij} 's and the F_j 's are given. In the supply constrained case, output (X_i) of the "i-th" industry, rather than final demand, is given. Rearrange the expression to read:

$$(8) \quad F_i = \left[X_i - \sum_{\substack{j=1 \\ j \neq i}}^n r_{ij} F_j \right] \div r_{ii}$$

With this equation solve for the final demand of the "i-th" industry, given X_i and interindustry requirements of all other industries. The change in F_i resulting from a change in X_i may be obtained by differentiating the above expression to obtain:

$$(9) \quad \frac{dF_i}{dX_i} = \frac{1}{r_{ii}}$$

If the outputs of more than one industry are constrained, it is necessary to expand the solution to determine new final demands. To solve for two or more supply constrained final demands, the technique is as follows. (Assume the two supply constrained industries to be "k" and "L"):

$$(10) \quad \begin{bmatrix} F_k \\ \\ F_L \end{bmatrix} = \begin{bmatrix} r_{kk} & r_{kL} \\ \\ r_{Lk} & r_{LL} \end{bmatrix}^{-1} \begin{bmatrix} X_k - \sum_{\substack{j=1 \\ j \neq k, L}}^n r_{kj} F_j \\ \\ X_L - \sum_{\substack{j=1 \\ j \neq k, L}}^n r_{Lj} F_j \end{bmatrix}$$

This system of simultaneous equations may accommodate as many industries as necessary.

Given these solutions to final demands, which can be supplied by the industries whose outputs are constrained, a solution for the total outputs of non-supply constrained industries can be obtained. To solve for total outputs, put final demand solutions for industry k and L in the economy's final demand schedule, and solve using equation (5).

It should be noted that through this special analysis outputs of the supply constrained industries are not completely residuals. In the analysis of the forest products industry in Washington State, for example, one consideration in determining outputs of domestic processors was that exports would react in a certain way.

One feature of the technique described is the built-in check on results. Final demand solutions can be expected to behave in some a priori manner. If they do not, a review is in order. If final demands are negative--an impossible situation in a real economy--the specified outputs cannot be correct. In other words, the calculations are internally inconsistent.^{2/}

The required adjustments apply to revisions in supply constrained outputs of one or more of the industries, or revisions in direct input coefficients (e.g., technological changes).

An outline of the procedure used in evaluating the various policy alternatives is:

- A. Specify the Structure of the Economy
 1. Final Demands (for non-supply constrained industries)
 2. Total Outputs (for supply constrained industries)
 3. Technology (direct input coefficients, consumption and other expenditure functions)
- B. Compute Final Demands for Supply Constrained Industries
- C. Compute Total Outputs for Non-Supply Constrained Industries
- D. Review Results for Consistency and Feasibility
- E. Revise Estimates in A.2. and Technical Coefficients as Necessary
- F. Repeat A through E as Required

^{2/} The reader who wishes to explore the subject of supply constraints should see L. M. Hartman's "The Input-Output Model and Regional Water Management," Journal of Farm Economics, Vol. 47, No. 5 (December 1965), pp. 1583-1591.

Empirical Issues

The analytical problem which prompted the development of this special solution technique was primarily that of the Washington State forest products industries. Because of high transport costs for logs, this industry locates near timber resources. The effect of an increase in the supply of stumpage, if the elasticity of the demand for timber is greater than one, is to change output of the timber industry. In other words, because of the change in supply of timber, the output of timber processing industries can be expected to change proportionately. The quality of the logs involved in the supply change and the elasticity of demand for each industry's output will determine the proportionate changes involved.

In order to estimate quantitatively the effects of changes in the supply of timber on the outputs of different forest products, a survey of experts in the forest products industry was conducted.^{3/} The survey results indicated it is reasonable to assume the long-run elasticity of demand facing the Timber industry is very high. That is, in the long run an increase in the public output of timber would not depress the price of timber in Washington, nor change the quantity of private timber cut. Relocation of capacity in the forest products industry would preclude these changes taking place. Moreover, it was concluded the elasticity of demand facing the lumber industry was also very high. Additional output could be sold without depressing prices. Demand for other wood manufacturers was less elastic. In other words, in the short run lower prices might have to be accepted in order to market additional output.

^{3/} Among the trade associations, public agencies, and individuals contacted were: the Western Wood Products Association, the American Plywood Association, the Western Forestry Industry Association, the Northwest Pulp and Paper Association, the U. S. Forest Service; Dr. John Parkany, Marketing Research, Weyerhaeuser Company; Mr. Vernon White, editor, The National Timber Industry; and Mr. Charles Young, consultant. The survey was conducted by Dr. Barney Dowdle, Associate Professor of Forestry and Economics at the University of Washington. He also analyzed the results. The results of the survey are reported in this appendix.

This information, coupled with data concerning log consumption per dollar of output for each industry, permitted the allocation of proposed changes in timber output among the various processing industries. Corresponding changes in the output of the various processing industries could then be determined.

A ten percent increase (decrease) in the output of timber would lead to the following estimated percentage increases (decreases) in the output of the processing sectors.

Lumber	16.0%
Plywood	4.5%
Pulp and Paper and Paper Products	5.0%
Other Wood	0.0%

In addition, exports would increase (decrease) five percent. With these data, a proposed change in the output of public timber may be translated into changes in the total outputs of those industries. Then, using the supply constrained solution technique, the total impact on the remainder of the economy may be determined.

A similar case occurred in the analysis of policy alternatives in the Upper Colorado River Basin. Increasing the forage available for the support of Range Livestock in each of the Colorado River sub-basins necessitated a decrease in the output or sales of other agricultural industries. The primary reason was decreased availability of forage for original industries.

APPENDIX C

BASIC INPUT-OUTPUT TABLES

The basic input-output tables used in the present study are included in this appendix. For the Upper Colorado River Basin, these tables include gross flows, direct input coefficients, and direct and indirect requirements tables (these are three basic input-output tables) for each sub-basin for 1963 and 1980. For Washington State, each of the three basic tables is presented in a 27-industry organization to show the 1963 economy. The policy alternatives were analyzed in terms of the 54-industry tables which describe the Washington economy in 1980. In addition to the three basic tables, a 1980 Washington State sales coefficients table is included. This was necessary because of its importance in analyzing the forest products policies.

The 1961 United States gross flows, direct input coefficients and direct and indirect requirements tables are enclosed for the reader's benefit. Since these tables were not directly utilized in the present study and since they are not exactly compatible with the tables for the two study regions, drawing comparisons between the U. S. tables and the study region tables is not recommended.

The industry definitions for the Upper Colorado River Basin are included in tables C-1, C-8, and C-15 for the Upper Main Stem, San Juan and Green River Sub-basins, respectively. The 27-industry classification used for Washington State 1963 tables is found in table C-22. The 54-industry classification is shown in table C-23. The definitions of the industries used to report the study results in the main body of this study are shown in table C-24.

One major dissimilarity between the industry definitions in the two study regions exists. That is, professional service and domestic employment is reported as Personal Service employment in Washington State, but as Household employment in each of the three Upper Colorado River sub-basins.

The direct input coefficients tables, as well as the direct and indirect requirements tables, do not all correspond to standard tables used in other types of input-output analysis. Usually only the industrial requirements are considered. For purposes of the present study, 1980 tables were modified to account for "induced" impacts and "indirect" impacts.

For the Upper Colorado River Sub-basins, this required that consumption be made a function of Household income, and local government expenditures a function of tax payments to local government. As a consequence, the direct input coefficients and direct and indirect requirements comprise two additional "industries."

A similar adjustment was made on the 1963 and 1980 Washington tables. In the 1963 direct and indirect requirements table, consumption has been made a function of income. In the 1980 tables, consumption was made a function of Household income, and investment and all government expenditures, except Federal defense expenditures, were made a function of tax payments and depreciation allowances.

Because of the manner in which the impact matrices were constructed, it was not possible to separate the direct and indirect impacts of a policy from the induced, or "income," impacts. The direct and indirect requirements tables have consequently been relabeled total requirements tables to indicate where this has been done.

Because the direct input coefficients and direct and indirect requirements tables comprise varying economic relationships, some interesting comparisons concerning economic impact multipliers arise. These multipliers and comparisons are included in Appendix F.

TABLE C-1

THE UPPER MAIN STEM SUB-BASIN DETAILED INDUSTRY CLASSIFICATION

<u>Industry</u>	<u>Standard Industry Classification</u> ^{a/}
1. Range Livestock	013 except 0139, 0133, 0132
2. Feeder Livestock	0139, 0133
3. Dairy	0132
4. Food and Field Crops	011
5. Truck Crops	012 except 0122
6. Fruit	0122
7. Forestry	081-082, 084-086
8. All other Agriculture	014, 019, 021
9. Coal	11, 12
10. Oil and Gas	131, 132
11. Uranium	1094
12. Zinc	103
13. All Other Mining	10 except 103, 1094; 141-3, 145-9
14. Food and Kindred Products	20
15. Lumber and Wood Products	24
16. Printing and Publishing	27
17. Fabricated Metals	34
18. Stone, Clay and Glass	32
19. All Other Manufacturing	25, 31, 29, 28, 33, 22, 23, 26, 39 ^{a/}
20. Wholesale Trade	50
21. Service Stations	554
22. All Other Retail	Parts 52-59, exclude 554, 581
23. Eating and Drinking Places	581
24. Agricultural Services	07
25. Lodging	70
26. All Other Services (Except Professional)	72, 73, 75-9, 483, 82, 841, 86, 806, 807, 809
27. Transportation	40-42, 44-47
28. Electric Energy	491
29. Other Utilities	48-49 except 483, 491
30. Contract Construction	151, 161-2, 17
31. Rentals and Finance	60-67
32. Households	80, 81, 88

^{a/} SIC 30, 35, 36, 37, 38, and 19 might apply in 1980. To our knowledge there were none of these industries in 1963.

Source: Standard Industrial Classification Manual, 1957,
Bureau of the Budget, Washington, D.C.

TABLE C-2. - UPPER MAIN STEN 1963 GROSS FLOWS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	2000	3669	82	0	0	0	0	348	0	0	0	0	0	3304	0	0
ROW 2 FEEDER LIVESTOCK	0	0	0	0	0	0	0	0	0	0	0	0	0	419	0	0
ROW 3 DAIRY	88	97	0	0	0	0	0	201	0	0	0	0	0	2193	0	0
ROW 4 FOOD FIELD CROPS	0	57	0	0	0	0	0	0	0	0	0	0	0	1771	0	0
ROW 5 TRUCK CROPS	0	0	0	0	0	0	0	0	0	0	0	0	0	27	0	0
ROW 6 FRUIT	80	0	51	0	0	0	0	0	0	0	0	0	0	940	0	0
ROW 7 FORESTY	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1045	0
ROW 8 ALL OTHER AGRICULTURE	5	0	1	2	0	0	0	1	0	0	0	0	0	813	0	0
ROW 9 COAL	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
ROW 10 OIL AND GAS	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0
ROW 11 URANIUM	0	0	0	0	0	0	0	0	0	0	16756	0	0	0	0	0
ROW 12 ZINC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 13 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	0	1115	0	0	0	0	0
ROW 14 FOOD AND KINDRED	0	862	132	0	0	0	0	201	0	0	0	0	0	107	0	0
ROW 15 LUMBER AND WOOD	17	0	0	0	0	0	0	0	0	0	194	0	0	0	0	0
ROW 16 PRINTING PUBLISHING	5	0	1	2	0	0	0	0	0	1	14	0	0	30	2	53
ROW 17 FABRICATED METALS	0	0	0	0	0	0	0	0	0	0	420	194	78	0	0	0
ROW 18 STONE CLAY GLASS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 19 ALL OTHER MANUFACTURING	461	0	67	433	20	92	44	62	103	24	200	71	33	219	43	10
ROW 20 WHOLESALE TRADE	265	4	33	76	0	49	14	17	51	24	330	66	101	141	10	7
ROW 21 SERVICE STATIONS	266	5	20	131	3	34	25	28	0	11	78	1	0	127	21	3
ROW 22 ALL OTHER RETAIL	507	11	74	97	0	129	15	14	0	20	100	2	20	20	10	10
ROW 23 EATING DRINKING PLACES	24	1	2	0	0	0	0	0	0	2	5	0	0	27	0	2
ROW 24 AGRICULTURE SERVICES	654	88	320	433	340	1030	0	62	0	0	0	0	0	0	0	0
ROW 25 LODGING	0	0	0	0	0	0	0	0	0	2	1	0	0	10	0	0
ROW 26 ALL OTHER SERVICES	70	11	3	63	1	27	4	17	4	73	192	33	27	120	24	21
ROW 27 TRANSPORTATION	320	130	172	97	1	5	0	50	0	42	8502	0	1	39	502	10
ROW 28 ELECTRIC ENERGY	104	7	41	19	3	22	0	19	152	16	304	304	134	161	100	30
ROW 29 OTHER UTILITIES	70	1	7	11	1	7	0	13	56	3	294	42	64	114	30	50
ROW 30 CONTRACT CONSTRUCTION	0	0	0	0	0	0	0	0	0	27	33	14	0	19	0	0
ROW 31 RENTALS AND FINANCE	1000	90	72	40	13	31	45	30	103	144	44	1	41	63	86	41
ROW 32 HOUSEHOLDS	13649	117	930	1003	207	2135	1157	730	3161	237	22054	4974	1048	4969	1402	1300
ROW 33 STATE AND FEDERAL	689	1	19	30	2	10	570	24	196	40	364	300	251	1965	111	110
ROW 34 LOCAL	1737	20	207	270	17	200	54	52	97	83	534	68	210	278	94	173
ROW 35 INVENTORY	417	0	0	0	0	0	0	0	300	0	0	853	440	844	78	44
ROW 36 DEPRECIATION	2430	63	443	345	26	224	66	99	356	38	8211	556	730	525	227	135
ROW 37 IMPORTS WITHIN BASIN	30	0	4	97	0	40	23	120	0	11	1700	0	132	0	49	2
ROW 38 IMPORTS OUTSIDE BASIN	2507	84	307	704	87	494	124	378	1274	958	22171	4599	704	1504	364	1374
ROW 39 TOTAL GROSS OUTLAYS	24540	5330	3060	4944	906	4043	2144	2620	5045	1781	91006	12178	1001	20937	5196	3080

TABLE C-2. - UPPER MAIN STEM 1963 GROSS FLOWS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Households 32
ROW 1 RANGE LIVESTOCK	0	0	0	0	0	0	0	49	0	0	0	0	0	0	0	677
ROW 2 FEEDER LIVESTOCK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 3 DAIRY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 4 FOOD FIELD CROPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 5 TRUCK CROPS	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	135
ROW 6 FRUIT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	530
ROW 7 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 8 ALL OTHER AGRICULTURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
ROW 9 COAL	1	7	5	13	3	19	2	0	8	8	0	968	3	0	16	747
ROW 10 OIL AND GAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 11 LUMBER	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 12 TIMBER	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 13 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	0	0	1	0	1403	0	0
ROW 14 FOOD AND KINDRED	1	0	0	0	0	0	1461	18	249	55	0	0	0	0	0	11010
ROW 15 CLOTHING	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0	220
ROW 16 FURNITURE	2	7	47	0	3	2300	106	20	12	90	30	12	73	44	177	177
ROW 17 FARMHOUSE	0	0	0	0	0	0	0	0	0	0	0	5	0	161	0	20
ROW 18 STONE CLAY GLASS	0	0	0	0	0	0	0	0	0	0	0	0	0	1217	0	170
ROW 19 ALL OTHER MANUFACTURING	107	83	80	22	4	102	9	170	14	22	5855	43	84	904	86	1561
ROW 20 WHOLESALE TRADE	2	4	40	45	7	122	573	51	50	221	500	15	51	340	50	6200
ROW 21 SERVICE STATIONS	1	9	0	20	1	50	6	30	5	8	1012	15	14	251	50	1200
ROW 22 ALL OTHER RETAIL	3	1	30	51	15	169	213	10	105	117	150	20	36	193	117	31210
ROW 23 EATING AND DRINKING PLACES	0	0	50	22	3	36	2	0	5	11	20	9	14	53	55	5911
ROW 24 AGRICULTURE SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 25 LOGGING	0	0	30	12	1	10	2	0	11	5	0	2	6	35	14	413
ROW 26 ALL OTHER SERVICES	15	9	52	229	74	1020	131	41	330	527	1817	82	255	719	483	5800
ROW 27 TRANSPORTATION	10	38	233	1940	193	2281	121	14	43	90	1900	38	14	1300	34	8830
ROW 28 ELECTRIC ENERGY	7	23	177	107	136	620	248	120	292	409	57	1063	48	120	291	3100
ROW 29 OTHER UTILITIES	5	17	50	153	54	697	367	20	407	432	143	96	122	232	426	7537
ROW 30 CONTRACT CONSTRUCTION	0	0	120	129	30	341	272	0	174	47	210	9	380	25336	116	8235
ROW 31 RENTALS AND REPAIRS	1	23	53	984	158	3000	314	70	240	426	642	148	176	903	977	18450
ROW 32 HOUSEHOLD	400	391	3300	7720	3142	23413	4160	1907	3300	7611	19900	2006	6015	23310	30500	9120
ROW 33 LOCAL	60	104	217	361	124	1102	254	90	270	247	803	1369	632	130	357	11010
ROW 34 STATE AND FEDERAL	40	25	810	1081	95	1111	198	35	62	126	1822	133	744	254	2773	45120
ROW 35 INVESTMENT	162	18	522	2015	355	7187	445	0	337	5244	0	14	6793	13230	0	0
ROW 36 DEPRECIATION	15	49	819	836	216	1628	624	440	845	718	4817	1084	1908	1313	1312	22917
ROW 37 IMPORTS WITHIN DISTRICT	54	75	8200	74	0	0	157	0	0	0	0	0	0	0	0	1700
ROW 38 IMPORTS FROM DISTRICT	777	267	2001	6116	383	2290	4967	1727	1783	4178	9901	1074	1541	25870	3788	76900
ROW 39 TOTAL GROSS OUTLAYS	1775	1612	17977	22739	4997	47510	14655	4900	6600	21371	52740	10157	20379	99855	41671	279977

NOT REPRODUCIBLE

TABLE C-2. - UPPER MAIN STEM 1963 GROSS FLOWS (Cont.)

COLUMN	Local Gov't 33	State & Federal 34	Inventory 35	Gross Priv. Invest. 36	Exports to U.S. & Poss-Born 37	Exports to Rest of World 38	Total Output 39
ROW 1 RANGE LIVESTOCK	0	1095	0	88	0	16399	28546
ROW 2 FEEDER LIVESTOCK	0	0	0	0	0	4915	5334
ROW 3 DAIRY	0	20	0	0	0	351	3060
ROW 4 FOND FIELD CROPS	0	735	0	0	185	3148	5944
ROW 5 TRUCK CROPS	0	2	0	0	37	683	908
ROW 6 FRUIT	0	18	0	0	952	4864	6863
ROW 7 FORESTY	0	0	0	0	49	137	2144
ROW 8 ALL OTHER AGRICULTURE	0	0	0	0	124	1076	2620
ROW 9 COAL	90	36	391	0	0	3615	5945
ROW 10 OIL AND GAS	0	0	0	1512	0	243	1781
ROW 11 URANIUM	0	66638	0	0	1528	8963	91886
ROW 12 ZINC	0	0	471	0	0	11711	12182
ROW 13 ALL OTHER MINING	83	190	336	529	0	2930	7801
ROW 14 FOOD AND KINDRED	112	52	1133	0	182	5276	20937
ROW 15 LUMBER AND WOOD	16	0	113	43	0	4526	5196
ROW 16 PRINTING PUBLISHING	92	13	30	0	19	33	3480
ROW 17 FABRICATED METALS	11	3	175	131	0	565	1775
ROW 18 STONE CLAY GLASS	130	66	21	0	0	0	1612
ROW 19 ALL OTHER MANUFACTURING	522	584	890	15	684	4179	17977
ROW 20 WHOLESALE TRADE	353	293	4830	1175	3799	2613	22739
ROW 21 SERVICE STATIONS	24	30	364	0	238	795	4997
ROW 22 ALL OTHER RETAIL	110	89	7337	960	2107	3272	47518
ROW 23 EATING DRINKING PLACES	8	59	469	0	149	7708	14655
ROW 24 AGRICULTURE SERVICES	0	0	0	0	0	0	4984
ROW 25 LODGING	3	54	397	0	658	6950	8654
ROW 26 ALL OTHER SERVICES	777	3005	2748	7	370	2137	21371
ROW 27 TRANSPORTATION	4034	220	0	79	2365	20856	52742
ROW 28 ELECTRIC ENERGY	439	201	20	0	17	986	18157
ROW 29 OTHER UTILITIES	274	451	6752	32	1322	0	28379
ROW 30 CONTRACT CONSTRUCTIONS	2199	3449	13225	37886	7529	0	99855
ROW 31 RENTALS AND FINANCE	3735	2467	0	779	167	5964	41671
ROW 32 HOUSEHOLD	10198	37688	0	1410	7277	2075	279977
ROW 33 LOCAL	935	17767	0	0	220	1020	41382
ROW 34 STATE AND FEDERAL	344	10093	0	0	206	3262	73049
ROW 35 INVENTORY	0	0	0	0	0	0	48195
ROW 36 DEPRECIATION	3241	0	0	0	0	0	57435
ROW 37 IMPORTS WITHIN BASIN	667	478	134	1790	99	816	30826
ROW 38 IMPORTS OUTSIDE BASIN	5942	9321	30790	33808	25445	17041	306444
ROW 39 TOTAL GROSS OUTLAYS	41342	155120	70632	80239	55729	146230	1403999

TABLE C-3. - UPPER MAIN STEM 1963 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	.009745	.687788	.020285	0.000000	0.000000	0.000000	0.000000	.131570	0.000000	0.000000	0.000000	0.000000	0.000000	.167438	0.000000	0.000000
ROW 2 FEEDER LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.020848	0.000000	0.000000
ROW 3 DAIRY	.003121	.018204	0.000000	0.000000	0.000000	0.000000	0.000000	.107149	0.000000	0.000000	0.000000	0.000000	0.000000	.109139	0.000000	0.000000
ROW 4 FOOD FIELD CROPS	0.000000	.010723	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.080120	0.000000	0.000000
ROW 5 TRUCK CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001361	0.000000	0.000000
ROW 6 FRUIT	.002835	0.000000	.019799	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.046759	0.000000	0.000000
ROW 7 FORESTRY	.000144	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.380669	0.000000	0.000000
ROW 8 ALL OTHER AGRICULTURE	.000179	0.000000	.000317	.000345	0.000000	0.000000	0.000000	.000376	0.000000	0.000000	0.000000	0.000000	0.000000	.040444	0.000000	0.000000
ROW 9 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001140	0.000000	0.000000	0.000000	0.000000	.000109	0.000000	.000994
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.014227	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.162359	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.012140	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 14 FOOD AND KINDRED	0.000000	.161596	.043106	0.000000	0.000000	0.000000	0.000000	.099624	0.000000	0.000000	0.000000	0.000000	0.000000	.005332	0.000000	0.000000
ROW 15 LUMBER AND WOOD	.000610	0.000000	0.000000	0.000000	0.000000	.000641	0.000000	0.000000	0.000000	0.000000	.000760	.000508	.000173	0.000000	.007312	.001905
ROW 16 PRINTING PUBLISHING	.000179	0.000000	.000317	.000345	0.000000	.000641	0.000000	0.000000	0.000000	0.000000	.000760	.000508	.000173	0.000000	.007312	.001905
ROW 17 FABRICATED METALS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.004566	.017296	.011922	0.000000	.000000	0.000000
ROW 18 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 19 ALL OTHER MANUFACTURING	.010397	.001496	.021870	.072946	.031322	.013775	.020492	.023684	.018437	.013211	.003159	.006230	.095086	.010887	.009473	.002994
ROW 20 WHOLESALE TRADE	.009580	.000748	.010777	.012774	.009280	.007360	.006660	.006301	.009124	.013719	.003690	.005958	.015419	.007022	.002017	.001994
ROW 21 SERVICE STATIONS	.009472	.000907	.009508	.022096	.003480	.005126	.011783	.010526	0.000000	.006097	.000844	.000093	.001272	.006314	.004035	.000994
ROW 22 ALL OTHER RETAIL	.020882	.001995	.024089	.016399	.031322	.019382	.007172	.005269	0.000000	.011179	.001179	.000186	.004292	.001415	.002017	.004647
ROW 23 EATING DRINKING PLACES	.000861	.000249	.000634	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001016	.000054	0.000000	0.000000	.001361	0.000000	.000644
ROW 24 AGRICULTURE SERVICES	.023250	.016459	.104596	.072946	.429234	.457312	0.000000	.023684	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 25 LODGING	.000323	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001016	.000011	0.000000	0.000000	.000817	0.000000	.000000
ROW 26 ALL OTHER SERVICES	.002691	.001995	.000951	.010530	.001160	.004804	.002049	.006391	.001140	.041158	.002088	.002983	.004133	.006369	.005447	.005988
ROW 27 TRANSPORTATION	.011661	.025935	.056101	.016399	.001160	.000801	0.000000	.021424	0.000000	.023374	.093506	0.000000	.000159	.001960	.113778	.004647
ROW 28 ELECTRIC ENERGY	.003696	.001247	.013312	.003280	.003480	.003364	0.000000	.007149	.027371	.009146	.004170	.034778	.020664	.008002	.021182	.010978
ROW 29 OTHER UTILITIES	.002476	.000249	.002219	.001899	.001160	.001121	0.000000	.004887	.010074	.001524	.003224	.003720	.009696	.005933	.005850	.014617
ROW 30 CONTRACT CONSTRUCTIONS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.015244	.000357	.001209	0.000000	.000925	0.000000	.001664
ROW 31 RENTALS AND FINANCE	.030606	.010957	.023455	.006732	.013921	.004645	.021004	.013910	.014437	.080792	.009519	.000093	.007789	.003157	.016744	.011974
ROW 32 HOUSEHOLD	.485917	.021945	.306497	.518729	.328306	.321320	.539446	.280827	.567953	.133130	.249832	.439185	.603243	.247292	.273956	.398209
ROW 33 LOCAL	.061700	.003700	.093700	.046900	.018700	.043300	.026100	.019800	.017400	.046600	.005800	.006000	.032000	.013800	.019100	.050400

TABLE C-3. - UPPER MAIN STEM 1963 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
ROW 1 RANGE LIVESTOCK	0.036000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.02261	0.000000
ROW 2 FEEDER LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 DAIRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 4 FOOD FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 5 TRUCK CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 6 FRUIT	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 7 FORESTY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 ALL OTHER AGRICULTURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 9 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	0.000000	0.250002	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 14 FOOD AND KINDRED	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 15 LUMBER AND WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 PRINTING PUBLISHING	0.001323	0.004155	0.002700	0.000000	0.000713	0.057036	0.007470	0.005048	0.001497	0.005841	0.000746	0.001165	0.005350	0.000505	0.000241	0.000044	0.002200
ROW 17 FABRICATED METALS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 18 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 19 ALL OTHER MANUFACTURING	0.002210	0.051939	0.004940	0.001122	0.000950	0.002529	0.000636	0.027766	0.001633	0.001353	0.111017	0.004236	0.006146	0.010441	0.002952	0.005662	0.012600
ROW 20 WHOLESALE TRADE	0.001323	0.002770	0.002585	0.002244	0.001426	0.003030	0.000289	0.010047	0.006532	0.013676	0.011306	0.001402	0.003782	0.003989	0.001204	0.002874	0.000500
ROW 21 SERVICE STATIONS	0.000662	0.005540	0.000459	0.001010	0.000238	0.001390	0.000397	0.007577	0.000544	0.000499	0.019196	0.001482	0.001024	0.002893	0.001204	0.000666	0.000500
ROW 22 ALL OTHER RETAIL	0.001005	0.000692	0.002260	0.002500	0.003327	0.004197	0.015019	0.003786	0.012656	0.007265	0.002905	0.002012	0.002679	0.002228	0.002818	0.113644	0.002668
ROW 23 EATING DRINKING PLACES	0.000000	0.000000	0.003045	0.001122	0.000713	0.000889	0.000159	0.000000	0.000544	0.000712	0.000451	0.000847	0.001024	0.000616	0.001313	0.021514	0.000100
ROW 24 AGRICULTURE SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 25 LODGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 26 ALL OTHER SERVICES	0.009265	0.005540	0.002987	0.011500	0.015922	0.025294	0.009218	0.008209	0.000293	0.032695	0.034468	0.008048	0.010753	0.008298	0.011602	0.021227	0.010700
ROW 27 TRANSPORTATION	0.011250	0.023545	0.013327	0.007778	0.041587	0.056564	0.008503	0.003154	0.005171	0.005556	0.036175	0.003706	0.001024	0.015063	0.000021	0.032172	0.004100
ROW 28 ELECTRIC ENERGY	0.004632	0.014543	0.010160	0.005305	0.029230	0.015371	0.017482	0.024401	0.033887	0.030914	0.001079	0.104440	0.003546	0.001477	0.004978	0.011509	0.010600
ROW 29 OTHER UTILITIES	0.003309	0.010387	0.003389	0.007685	0.011644	0.017289	0.025826	0.005044	0.008993	0.026783	0.002709	0.009425	0.008983	0.002684	0.010234	0.027470	0.000700
ROW 30 CONTRACT CONSTRUCTIONS	0.000000	0.000000	0.007353	0.006451	0.006416	0.008450	0.019151	0.000000	0.020958	0.005413	0.004142	0.000741	0.027972	0.029505	0.002791	0.029077	0.031100
ROW 31 RENTALS AND FINANCE	0.000662	0.014543	0.003045	0.009366	0.033993	0.074381	0.022092	0.015566	0.032254	0.026426	0.012169	0.014014	0.012923	0.016429	0.023451	0.007104	0.000200
ROW 32 HOUSEHOLD	0.002449	0.025152	0.003761	0.007735	0.076806	0.000510	0.029753	0.000617	0.000245	0.071971	0.078158	0.276713	0.334400	0.249198	0.733069	0.032500	0.439700
ROW 33 LOCAL	0.000900	0.005200	0.024000	0.018100	0.026700	0.027300	0.017800	0.019200	0.033000	0.015300	0.015200	0.134900	0.004400	0.001600	0.000500	0.039300	0.022500

TABLE C-4. - UPPER MAIN STEM 1963 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	1.123318	.811186	.042966	.012537	.014937	.015261	.010505	.181474	.011028	.005392	.009944	.008421	.011801	.225128	.010768	.008390
ROW 2 FEEDER LIVESTOCK	.000905	1.004303	.081659	.000879	.000819	.000826	.000786	.002967	.000818	.000403	.000515	.000925	.000876	.022002	.000800	.000624
ROW 3 DAIRY	.000807	.044571	1.009506	.005202	.004817	.004857	.004620	.124214	.004813	.002364	.003031	.003975	.005152	.121161	.004702	.003666
ROW 4 FOOD FIELD CROPS	.004005	.029118	.007171	1.003888	.003621	.003621	.003479	.012694	.003624	.001781	.002283	.002767	.003879	.093389	.003540	.002761
ROW 5 TRUCK CROPS	.000574	.000768	.000528	.000557	1.000505	.000507	.000502	.000620	.000524	.000254	.000330	.000400	.000560	.001880	.000511	.000390
ROW 6 FRUIT	.007278	.014509	.022362	.003956	.003644	1.003669	.003554	.010834	.003703	.001801	.002331	.002028	.003962	.053668	.003614	.002813
ROW 7 FORESTRY	.000791	.000655	.000328	.000362	.000326	.000574	1.000323	.000374	.000336	.000173	.001192	.000256	.000361	.000413	.380398	.000260
ROW 8 ALL OTHER AGRICULTURE	.004887	.010528	.005280	.004122	.003463	.003484	.003397	1.007964	.003540	.001719	.002228	.002703	.003787	.044638	.003454	.002684
ROW 9 COAL	.005797	.005830	.006341	.005736	.006077	.006196	.004440	.005437	1.008618	.003692	.003494	.007173	.007140	.005974	.006877	.005804
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.014433	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.223031	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	.001679	.001509	.001601	.001591	.001355	.001454	.001302	.001367	.001337	.001290	.015705	.001027	1.001478	.001431	.001389	.001224
ROW 14 FOOD AND KINDRED	.043406	.206387	.079598	.042140	.039297	.039627	.037685	.142094	.039258	.019307	.024726	.029974	.042020	1.055362	.038393	.029914
ROW 15 LUMBER AND WOOD	.001572	.001337	.000777	.000864	.000776	.001428	.000770	.000847	.000801	.000415	.003084	.000911	.000860	.000927	1.000787	.000621
ROW 16 PRINTING PUBLISHING	.010857	.010701	.010240	.010917	.012084	.012222	.008192	.008844	.008912	.005960	.005639	.006165	.016348	.010904	.008902	1.022137
ROW 17 FABRICATED METALS	.000271	.000258	.000250	.000260	.000233	.000242	.000219	.000227	.000242	.000182	.005909	.017490	.012180	.000237	.000241	.000148
ROW 18 STONE CLAY GLASS	.001853	.001749	.001729	.001758	.001509	.001607	.001464	.001504	.001502	.001229	.000955	.001144	.001654	.001571	.001542	.001329
ROW 19 ALL OTHER MANUFACTURING	.037538	.041205	.048523	.093343	.058238	.041747	.034294	.049980	.032841	.024839	.026555	.018208	.021443	.042877	.043851	.015107
ROW 20 WHOLESALE TRADE	.038644	.037444	.039552	.040533	.037695	.036335	.030264	.033996	.033714	.027450	.021627	.024018	.041858	.036637	.030194	.021172
ROW 21 SERVICE STATIONS	.018091	.018478	.018263	.029816	.013017	.014896	.017801	.021044	.006286	.010046	.007302	.004899	.008029	.018960	.016972	.009334
ROW 22 ALL OTHER RETAIL	.137856	.128972	.119417	.127986	.133536	.122121	.107358	.107410	.104399	.062493	.067571	.079923	.116004	.110063	.107052	.083944
ROW 23 EATING DRINKING PLACES	.022709	.021789	.019547	.021286	.019185	.019201	.019048	.018482	.019860	.010804	.012615	.015138	.021193	.020373	.019472	.015666
ROW 24 AGRICULTURE SERVICES	.031016	.049387	.117714	.076126	.432328	.460433	.002917	.047279	.003039	.001482	.001913	.002321	.003252	.051480	.002967	.002311
ROW 25 LODGING	.002148	.002107	.001562	.001850	.001627	.001593	.001551	.001670	.001616	.001897	.001060	.001217	.001701	.002461	.001628	.001210
ROW 26 ALL OTHER SERVICES	.038298	.040330	.034322	.045211	.034906	.038239	.030732	.037994	.030862	.061222	.025536	.025550	.036401	.039137	.040300	.029924
ROW 27 TRANSPORTATION	.069039	.092388	.108547	.071589	.051009	.051231	.045374	.077691	.046297	.052163	.148414	.035140	.051142	.061852	.164720	.041714
ROW 28 ELECTRIC ENERGY	.027523	.029458	.038022	.027932	.035030	.035753	.018396	.031441	.049217	.022879	.018273	.052979	.043271	.033070	.043115	.027280
ROW 29 OTHER UTILITIES	.038338	.037462	.033056	.036722	.034500	.034658	.030123	.036094	.041502	.019704	.024215	.027725	.043483	.038031	.037458	.039196
ROW 30 CONTRACT CONSTRUCTIONS	.057457	.054694	.051370	.055490	.048567	.050200	.047108	.047594	.048820	.049920	.031903	.038296	.053022	.050227	.049710	.042441
ROW 31 RENTALS AND FINANCE	.142397	.144458	.114012	.102984	.105751	.098376	.102386	.105996	.102319	.131828	.054840	.063483	.098933	.100551	.110418	.079444
ROW 32 HOUSEHOLD	.976641	.922683	.795000	.949522	.858146	.861812	.858268	.810414	.894571	.429737	.562753	.683313	.956617	.839751	.871851	.677293
ROW 33 LOCAL	.132683	.123154	.159367	.116683	.086796	.110450	.078905	.100937	.075981	.080261	.045563	.052229	.092955	.103301	.089593	.044514

TABLE C-4. - UPPER MAIN STEM 1963 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
ROW 1 RANGE LIVESTOCK	.006584	.009287	.005443	.005940	.013816	.013366	.030058	.018534	.016262	.010871	.008769	.008955	.007365	.008074	.013873	.017794	.011381
ROW 2 FEEDER LIVESTOCK	.000484	.008690	.000408	.000920	.001026	.000993	.002775	.000701	.001367	.000826	.000654	.000667	.000548	.000600	.001030	.001314	.000860
ROW 3 DAIRY	.002842	.004059	.002302	.002467	.006033	.005839	.015474	.004121	.007701	.004828	.003866	.003921	.003221	.003527	.006057	.007794	.005032
ROW 4 FOOD FIELD CROPS	.002140	.003056	.001803	.001858	.004543	.004397	.011873	.003001	.005931	.003643	.002897	.002953	.002426	.002656	.004561	.005824	.003795
ROW 5 TRUCK CROPS	.000308	.000439	.000257	.000268	.000656	.000634	.002030	.000404	.000507	.000485	.000417	.000422	.000349	.000384	.000660	.000844	.000516
ROW 6 FRUIT	.002180	.003113	.001812	.001809	.004636	.004483	.007834	.003037	.004797	.003571	.002949	.002995	.002467	.002708	.004656	.005944	.003759
ROW 7 FORESTRY	.000202	.000290	.000180	.000174	.000422	.000410	.000260	.000261	.000311	.000310	.000270	.000288	.000237	.000259	.000420	.000544	.000462
ROW 8 ALL OTHER AGRICULTURE	.002083	.002974	.001727	.001804	.004431	.004284	.006803	.002847	.004384	.003389	.002817	.002960	.002356	.002588	.004450	.005694	.003574
ROW 9 COAL	.004861	.010486	.004016	.003750	.009598	.007942	.005686	.006231	.004989	.000160	.004146	.111323	.003852	.003775	.006779	.007094	.007952
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	.000954	.260432	.001366	.000931	.001869	.001906	.001590	.001071	.001921	.001405	.001267	.001519	.001822	.028964	.001660	.001941	.005641
ROW 14 FOOD AND KINDRED	.023192	.033118	.019561	.020138	.049219	.047640	.133118	.033674	.065574	.039621	.031387	.032012	.026298	.028772	.049412	.043084	.041230
ROW 15 LUMBER AND WOOD	.000483	.000695	.000433	.000917	.001808	.000978	.000617	.000621	.000743	.000740	.000645	.000692	.000568	.001503	.001001	.001274	.001135
ROW 16 PRINTING PUBLISHING	.004597	.013525	.007199	.004745	.011256	.008520	.014977	.011724	.010263	.014191	.007974	.008573	.011256	.007221	.014586	.012544	.010976
ROW 17 FABRICATED METALS	1.000152	.003318	.000184	.000144	.000321	.000313	.000240	.000147	.000298	.000245	.000203	.000435	.000249	.003126	.000287	.000364	.000623
ROW 18 STONE CLAY GLASS	.001044	1.001552	.001367	.000954	.002022	.002030	.001540	.001194	.001877	.001504	.001354	.001407	.001697	.020917	.001852	.002227	.005660
ROW 19 ALL OTHER MANUFACTURING	.072949	.070050	1.015029	.020220	.023762	.026966	.016393	.039864	.017287	.015758	.127768	.021448	.016976	.028960	.019438	.021304	.033933
ROW 20 WHOLESALE TRADE	.016494	.028620	.015964	1.016366	.032920	.034087	.060180	.029336	.030012	.036974	.032223	.023923	.020894	.024432	.031930	.038767	.033994
ROW 21 SERVICE STATIONS	.004659	.011803	.004016	.006270	1.008950	.010284	.006761	.012640	.006903	.006545	.025045	.007039	.005418	.009251	.009011	.009890	.000043
ROW 22 ALL OTHER RETAIL	.003550	.009787	.052886	.056147	.134094	1.131104	.092032	.093874	.106197	.103308	.086419	.008521	.072212	.079622	.133840	.167644	.105377
ROW 23 EATING DRINKING PLACES	.011815	.016821	.012620	.011325	.025527	.024991	1.014756	.015237	.018299	.018944	.018564	.018903	.014212	.015384	.026154	.031747	.016693
ROW 24 AGRICULTURE SERVICES	.001701	.002557	.001495	.001553	.003807	.003682	.007843	1.002727	.004163	.002958	.002423	.002463	.002027	.002224	.003823	.004880	.003107
ROW 25 LOGGING	.001060	.001460	.002863	.001488	.002237	.002355	.001464	.001280	1.002860	.001774	.001694	.001537	.001558	.001769	.002303	.002499	.001655
ROW 26 ALL OTHER SERVICES	.020253	.034682	.020825	.031931	.055294	.065490	.034528	.031987	.070915	1.062250	.061584	.036273	.040341	.034703	.048445	.045277	.052583
ROW 27 TRANSPORTATION	.041383	.067958	.042717	.126104	.100517	.115213	.049606	.040537	.049661	.049603	1.078263	.048652	.034280	.056509	.056785	.078041	.098443
ROW 28 ELECTRIC ENERGY	.017527	.740028	.022313	.016894	.056572	.041980	.035900	.042584	.057290	.053178	.019367	1.137631	.017641	.017517	.030993	.028247	.032055
ROW 29 OTHER UTILITIES	.022346	.040548	.019881	.025088	.051585	.057620	.050872	.029764	.074594	.057182	.029361	.038247	1.030794	.027528	.049448	.048841	.034291
ROW 30 CONTRACT CONSTRUCTIONS	.032040	.046992	.043129	.035926	.070558	.072603	.064936	.038344	.076962	.053598	.047315	.051202	.074781	1.448628	.063393	.074044	.124951
ROW 31 RENTALS AND FINANCE	.053563	.094495	.055184	.096049	.140199	.179927	.090134	.082168	.113219	.106073	.082705	.099843	.072786	.076371	1.126315	.128244	.170855
ROW 32 HOUSEHOLD	.524803	.749227	.428951	.453426	1.118189	1.080135	.644492	.681878	.791947	.818491	.769184	.717250	.592476	.652704	1.123384	1.441204	.873082
ROW 33 LOCAL	.001565	.130894	.155579	.050026	.098185	.099488	.067534	.068164	.090904	.070765	.073765	.280503	.084437	.045932	.074778	.040814	1.080488

TABLE C-5. - UPPER MAIN STEM 1960 GROSS FLOWS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ROW 1 RANGE LIVESTOCK	2918	15269	52	0	0	0	0	318	0	0	0	0	0	4523	0	0	0
ROW 2 FEEDER LIVESTOCK	0	0	0	0	0	0	0	0	0	0	0	0	0	8733	0	0	0
ROW 3 DAIRY	99	54	0	0	0	0	0	48	0	0	0	0	0	1705	0	0	0
ROW 4 FOOD FIELD CROPS	0	296	0	0	0	0	0	0	0	0	0	0	0	2192	0	0	0
ROW 5 TRUCK CROPS	0	0	0	0	0	0	0	0	0	0	0	0	0	70	0	0	0
ROW 6 FRUIT	99	0	44	0	0	0	0	0	0	0	0	0	0	1635	0	0	0
ROW 7 FORESTY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2367	0	0
ROW 8 ALL OTHER AGRICULTURE	0	0	0	0	0	0	0	0	0	0	0	0	0	1009	0	0	0
ROW 9 COAL	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	3
ROW 10 OIL AND GAS	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0
ROW 11 URANIUM	0	0	0	0	0	0	0	0	0	0	16271	0	0	0	0	0	0
ROW 12 ZINC	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0
ROW 13 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	0	1067	19	9	0	0	0	0
ROW 14 FOOD AND KINDRED	0	4355	111	0	0	0	0	261	0	0	0	0	0	209	0	0	0
ROW 15 LUMBER AND WOOD	30	0	0	0	0	9	0	0	0	0	178	0	0	0	0	0	0
ROW 16 PRINTING PUBLISHING	0	0	0	0	0	9	0	0	8	1	0	0	62	70	0	125	3
ROW 17 FABRICATED METALS	0	0	0	0	0	0	0	0	0	0	445	276	107	0	0	0	3
ROW 18 STONE CLAY GLASS	0	0	0	0	0	0	0	0	147	0	0	0	0	0	0	0	0
ROW 19 ALL OTHER MANUFACTURING	511	27	57	503	39	132	77	12	82	15	356	131	53	418	56	29	162
ROW 20 WHOLESALE TRADE	391	27	28	87	11	66	26	14	0	14	356	98	133	244	12	15	3
ROW 21 SERVICE STATIONS	391	27	26	151	4	47	44	26	0	6	89	0	9	209	31	7	3
ROW 22 ALL OTHER RETAIL	632	54	64	118	37	180	26	12	0	11	89	0	36	35	12	37	5
ROW 23 EATING DRINKING PLACES	39	0	3	0	0	0	0	0	0	1	0	0	0	35	0	7	0
ROW 24 AGRICULTURE SERVICES	722	436	271	503	520	4291	0	58	0	0	0	0	0	0	0	0	0
ROW 25 LODGING	0	0	0	0	0	0	0	0	0	1	0	0	0	35	0	0	0
ROW 26 ALL OTHER SERVICES	99	54	3	79	1	38	7	14	8	43	178	49	36	209	31	44	26
ROW 27 TRANSPORTATION	361	699	144	110	1	9	0	51	0	23	8358	0	0	70	710	37	28
ROW 28 ELECTRIC ENERGY	120	27	36	29	5	38	0	17	237	0	445	572	187	348	137	88	15
ROW 29 OTHER UTILITIES	60	0	5	16	0	0	0	12	882	0	267	65	89	209	44	110	13
ROW 30 CONTRACT CONSTRUCTIONS	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	15	0
ROW 31 RENTALS AND FINANCE	1203	457	67	48	17	57	84	34	155	0	16	10	0	139	100	103	5
ROW 32 HOUSEHOLDS	14413	509	790	3567	397	3036	1974	677	4347	135	22210	8671	5622	6425	1504	2891	695
ROW 33 LOCALITY	2219	99	291	390	29	498	113	854	162	50	620	110	322	560	141	442	113
ROW 34 OTHER FINAL PAYMENTS	5942	4410	585	1245	148	1032	1309	821	2941	590	37798	8295	2747	5677	988	3416	1493
ROW 35 TOTAL GROSS OUTLAY	30083	26882	2577	6884	1210	9451	3658	2409	8177	1015	88911	16333	8083	34794	6229	7509	2570
ROW 36 OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 37 OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 38 OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 39 OTHER	10	10	50	57	35	55	59	59	59	51	59	59	30	37			

NOTE C-2 - UPPER MAIN STEM 1960 GROSS FLOWS (CONT.)

TABLE C-5. - UPPER MAIN STEM 1980 GROSS FLOWS (Cont.)

COLUMN	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Households 32	Local Output 33	Final Demand 34	TOTAL Output 35
ROW 1 RANGE LIVESTOCK	0	0	0	0	0	0	61	0	0	0	0	0	0	0	713	0	6229	36683
ROW 2 FEEDER LIVESTOCK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18144	29882
ROW 3 DAIRY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	654	2577
ROW 4 FOOD FIELD CROPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	0	4341	6884
ROW 5 TRUCK CROPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	0	964	1210
ROW 6 FRUIT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	764	0	8916	9951
ROW 7 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	1270	3658
ROW 8 ALL OTHER AGRICULTURE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	549	0	851	2449
ROW 9 COAL	6	0	0	0	0	0	0	17	47	0	1566	150	0	0	1027	149	5294	8177
ROW 10 OIL AND GAS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1080	1815
ROW 11 URANIUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72648	88911
ROW 12 ZINC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16317	16333
ROW 13 ALL OTHER MINING	733	0	0	0	0	0	0	0	0	0	0	0	2644	0	0	127	4486	9883
ROW 14 FOOD AND KINDRED	0	0	0	0	0	3561	27	524	141	0	0	0	0	0	18343	225	7857	34794
ROW 15 LUMBER AND WOOD	0	0	0	0	0	0	0	0	0	0	0	0	144	0	271	23	5574	6229
ROW 16 PRINTING PUBLISHING	11	73	0	9	5354	263	34	35	328	64	15	210	0	351	329	235	0	7588
ROW 17 FABRICATED METALS	0	10	0	0	0	0	0	0	0	0	15	0	288	0	30	16	1363	2579
ROW 18 STONE CLAY GLASS	0	0	0	0	0	0	0	0	0	0	0	0	2301	0	318	279	0	3837
ROW 19 ALL OTHER MANUFACTURING	147	110	43	9	272	29	191	35	47	7252	91	270	1582	175	1984	643	3114	18253
ROW 20 WHOLESALE TRADE	8	55	85	9	272	1372	68	122	703	704	15	120	575	88	11864	884	24488	42724
ROW 21 SERVICE STATIONS	17	10	43	0	91	29	55	0	0	1219	15	30	431	88	2237	58	3419	8722
ROW 22 ALL OTHER RETAIL	3	55	85	26	363	438	27	245	328	193	30	98	288	263	59647	254	27114	88788
ROW 23 EATING DRINKING PLACES	0	55	43	9	91	0	0	0	47	64	15	30	144	88	11774	19	16737	29191
ROW 24 AGRICULTURE SERVICES	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	28	6829
ROW 25 LODGING	0	37	43	0	0	0	0	35	0	0	0	38	0	0	836	6	18451	17471
ROW 26 ALL OTHER SERVICES	17	73	513	148	2269	263	55	734	1688	2182	152	608	1150	1052	12793	2048	34584	46897
ROW 27 TRANSPORTATION	68	274	4187	366	4721	263	28	87	281	2318	61	30	2157	88	19754	3082	24912	84180
ROW 28 ELECTRIC ENERGY	45	219	210	253	1361	525	164	594	1641	64	1594	120	144	614	4738	767	0	15391
ROW 29 OTHER UTILITIES	31	110	342	113	1633	759	34	856	1453	193	152	368	431	877	11894	496	18888	29997
ROW 30 CONTRACT CONSTRUCTIONS	0	128	250	52	726	642	0	367	281	257	46	1280	42994	263	11859	3841	88728	143811
ROW 31 RENTALS AND FINANCE	42	319	2130	297	6889	701	116	646	1266	1827	384	488	2876	2192	38838	9532	17375	87478
ROW 32 HOUSEHOLD	686	3433	8840	5483	44731	8285	2722	6720	16702	24269	4280	8453	33580	64273	16996	34093	73518	432417
ROW 33 LOCAL	226	266	612	262	2583	613	168	673	657	1185	2483	1037	242	911	21693	2634	39195	81533
ROW 34 OTHER FINAL PAYMENTS	792	13019	25263	1694	19547	11448	3088	5781	21287	23195	4444	16787	52948	10355	193163	22238	318232	999498
ROW 35 TOTAL GROSS OUTLAY	3837	18253	42720	8722	90788	29191	6829	17471	46897	64180	15341	20997	143811	87478	432417	81533	999498	298577

TABLE C-6. - UPPER MAIN STEM 1980 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	.097000	.568000	.020000	0.000000	0.000000	0.000000	0.000000	.132000	0.000000	0.000000	0.000000	0.000000	0.000000	.130000	0.000000	0.000000
ROW 2 FEEDER LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.251000	0.000000	0.000000
ROW 3 DAIRY	.003000	.002000	0.000000	0.000000	0.000000	0.000000	0.000000	.020000	0.000000	0.000000	0.000000	0.000000	0.000000	.049000	0.000000	0.000000
ROW 4 FODR FIELD CROPS	0.000000	.011000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.063000	0.000000	0.000000
ROW 5 TRUCK CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.002000	0.000000	0.000000
ROW 6 FRUIT	.003000	0.000000	.017000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.047000	0.000000	0.000000
ROW 7 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.380000	0.000000
ROW 8 ALL OTHER AGRICULTURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	0.000000	0.000000	0.000000	.029000	0.000000	0.000000
ROW 9 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.015000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.183000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.300000	0.000000	.012000	.001000	.001000	0.000000	0.000000	0.000000
ROW 14 FOOD AND KINDRED	0.000000	.162000	.043000	0.000000	0.000000	0.000000	0.000000	.100000	0.000000	0.000000	0.000000	0.000000	0.000000	.004000	0.000000	0.000000
ROW 15 LUMBER AND WOOD	.001000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	-0.000000	0.000000	.002000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 PRINTING PUBLISHING	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	.001000	.001000	0.000000	0.000000	0.000000	.007000	.002000	.017000
ROW 17 FABRICATED METALS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	.005000	.017000	.012000	0.000000	0.000000	0.000000
ROW 18 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.018000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 19 ALL OTHER MANUFACTURING	.017000	.001000	.022000	.073000	.032000	.014000	.021000	.005000	.010000	.015000	.004000	.008000	.006000	.012000	.009000	.004000
ROW 20 WHOLESALE TRADE	.010000	.001000	.011000	.013000	.009000	.007000	.007000	.006000	0.000000	.014000	.004000	.008000	.015000	.007000	.002000	.002000
ROW 21 SERVICE STATIONS	.010000	.001000	.010000	.022000	.003000	.005000	.012000	.011000	0.000000	.006000	.001000	0.000000	.001000	.006000	.005000	.001000
ROW 22 ALL OTHER RETAIL	.021000	.002000	.025000	.016000	.031000	.019000	.007000	.005000	0.000000	.011000	.001000	0.000000	.004000	.001000	.002000	.005000
ROW 23 EATING DRINKING PLACES	.001000	0.000000	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	0.000000	.001000	0.000000	.001000
ROW 24 AGRICULTURE SERVICES	.024000	.016000	.105000	.073000	.430000	.454000	0.000000	.024000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 25 LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000
ROW 26 ALL OTHER SERVICES	.003000	.002000	.001000	.011000	.001000	.004000	.002000	.006000	.001000	.002000	.004000	.004000	.004000	.006000	.005000	.004000
ROW 27 TRANSPORTATION	.012000	.026000	.050000	.016000	.001000	.001000	0.000000	.021000	0.000000	.023000	.094000	0.000000	0.000000	.002000	.114000	.005000
ROW 28 ELECTRIC ENERGY	.004000	.001000	.014000	.004000	.004000	.004000	0.000000	.007000	.029000	.010000	.005000	.035000	.021000	.010000	.022000	.012000
ROW 29 OTHER UTILITIES	.002000	0.000000	.002000	.002000	.001000	.001000	0.000000	.005000	.010000	.002000	.003000	.004000	.010000	.006000	.007000	.014000
ROW 30 CONTRACT CONSTRUCTION	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	.016000	.001000	.001000	0.000000	.001000	0.000000	.002000
ROW 31 RENTALS AND FINANCE	.040000	.017000	.026000	.007000	.014000	.006000	.023000	.014000	.010000	.001000	.001000	.001000	.008000	.004000	.017000	.014000
ROW 32 HOUSEHOLD	.479100	.021900	.306500	.518100	.328000	.321200	.539600	.281000	.531600	.133000	.249800	.439100	.601400	.192300	.258400	.396400
ROW 33 TOTAL	.074800	.003600	.112900	.056000	.023900	.052600	.030800	.022400	.021100	.049200	.007000	.007200	.038600	.016700	.022900	.050000

TABLE C-6. - UPPER MAIN STEM 1980 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
ROW 1 RANGE LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001000	0.000000
ROW 2 FEEDER LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 DAIRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 4 FOOD FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000100	0.000000
ROW 5 THICK CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 6 FRUIT	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 7 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 ALL OTHER AGRICULTURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001200	0.000000
ROW 9 COAL	0.001000	0.002000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.005000	0.000000	0.000000	0.002300	0.001800
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	0.000000	0.250000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001500
ROW 14 FOOD AND KINDRED	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.120000	0.000000	0.030000	0.000000	0.000000	0.000000	0.000000	0.000000	0.002000	0.002700
ROW 15 LUMBER AND WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 PRINTING PUBLISHING	0.001000	0.004000	0.004000	0.000000	0.001000	0.009000	0.009000	0.005000	0.002000	0.007000	0.001000	0.001000	0.007000	0.000000	0.000000	0.000700	0.002800
ROW 17 FABRICATED METALS	0.001000	0.000000	0.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001000	0.000000	0.002000	0.000000	0.000100
ROW 18 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000700	0.003400
ROW 19 ALL OTHER MANUFACTURING	0.003000	0.052000	0.000000	0.001000	0.001000	0.003000	0.001000	0.028000	0.002000	0.001000	0.113000	0.006000	0.009000	0.011000	0.002000	0.003600	0.007800
ROW 20 WHOLESALE TRADE	0.001000	0.003000	0.003000	0.002000	0.001000	0.003000	0.007000	0.010000	0.007000	0.015000	0.011000	0.001000	0.004000	0.004000	0.001000	0.002700	0.009800
ROW 21 SERVICE STATIONS	0.001000	0.006000	0.001000	0.001000	0.000000	0.001000	0.001000	0.008000	0.000000	0.000000	0.019000	0.001000	0.001000	0.003000	0.001000	0.005100	0.006000
ROW 22 ALL OTHER RETAIL	0.002000	0.001000	0.003000	0.002000	0.003000	0.004000	0.015000	0.004000	0.014000	0.007000	0.003000	0.002000	0.003000	0.002000	0.003000	0.003100	0.003100
ROW 23 EATING DRINKING PLACES	0.000000	0.000000	0.003000	0.001000	0.001000	0.001000	0.000000	0.000000	0.000000	0.001000	0.001000	0.001000	0.001000	0.001000	0.001000	0.002700	0.006200
ROW 24 AGRICULTURE SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 25 LUNGING	0.000000	0.000000	0.002000	0.001000	0.000000	0.000000	0.000000	0.000000	0.002000	0.000000	0.000000	0.000000	0.001000	0.000000	0.000000	0.001900	0.000000
ROW 26 ALL OTHER SERVICES	0.010000	0.006000	0.004000	0.012000	0.016000	0.025000	0.009000	0.008000	0.002000	0.036000	0.034000	0.010000	0.020000	0.008000	0.012000	0.029500	0.025300
ROW 27 TRANSPORTATION	0.011000	0.024000	0.015000	0.098000	0.002000	0.052000	0.009000	0.003000	0.005000	0.006000	0.036000	0.004000	0.001000	0.015000	0.001000	0.024000	0.038000
ROW 28 ELECTRIC ENERGY	0.006000	0.016000	0.012000	0.005000	0.029000	0.015000	0.018000	0.024000	0.004000	0.035000	0.001000	0.105000	0.004000	0.001000	0.007000	0.018000	0.009700
ROW 29 OTHER UTILITIES	0.005000	0.011000	0.006000	0.008000	0.013000	0.018000	0.026000	0.005000	0.004000	0.006000	0.004000	0.094000	0.000000	0.000000	0.000000	0.027000	0.006000
ROW 30 CONTRACT CONSTRUCTIONS	0.000000	0.000000	0.007000	0.006000	0.004000	0.008000	0.022000	0.000000	0.021000	0.006000	0.004000	0.094000	0.000000	0.000000	0.000000	0.027000	0.007100
ROW 31 RENTALS AND FINANCE	0.002000	0.015000	0.017000	0.050000	0.034000	0.075000	0.024000	0.017000	0.037000	0.027000	0.018000	0.020000	0.016000	0.026000	0.025000	0.049800	0.118000
ROW 32 HOUSEHOLD	0.297100	0.244600	0.193900	0.235100	0.675900	0.579600	0.308400	0.398500	0.398500	0.468600	0.376100	0.276200	0.420500	0.208300	0.733000	0.039300	0.418100
ROW 33 LOCAL	0.048300	0.075100	0.015000	0.016400	0.032300	0.033100	0.021800	0.023400	0.040000	0.176800	0.014500	0.161900	0.518700	0.001900	0.010300	0.000100	0.032300

TABLE C-7. - UPPER MAIN STEM 1980 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	.1126618	.497307	.053128	.019064	.021331	.021804	.016418	.143834	.016318	.008628	.010842	.013122	.018401	.340580	.016440	.013347
ROW 2 FEEDER LIVESTOCK	.013627	.1053961	.022893	.013259	.012363	.012537	.011860	.036994	.011708	.006247	.007833	.009479	.013294	.276304	.011879	.009647
ROW 3 DAIRY	.006125	.014880	.1004749	.002728	.002554	.002590	.002439	.027974	.002484	.001284	.001611	.001949	.002734	.056175	.002443	.001941
ROW 4 FOOD FIELD CROPS	.003680	.025226	.000089	.1003580	.003336	.003382	.003204	.009761	.003184	.001687	.002116	.002560	.003591	.072483	.003208	.002684
ROW 5 TRUCK CROPS	.000547	.000785	.000548	.000533	.1000485	.000490	.000480	.000624	.000477	.000249	.000317	.000384	.000538	.002574	.000480	.000384
ROW 6 FRUIT	.006255	.012627	.021710	.002800	.002616	.1002652	.002504	.008141	.002449	.001317	.001654	.002001	.002807	.053901	.002508	.002814
ROW 7 FORESTRY	.000720	.000504	.000277	.000288	.000261	.000644	.1000257	.000294	.000295	.000147	.001100	.000205	.000289	.000396	.380259	.000211
ROW 8 ALL OTHER AGRICULTURE	.002888	.007299	.003743	.002813	.002588	.002620	.002526	.1005261	.002511	.001319	.001668	.002020	.002831	.033040	.002528	.002044
ROW 9 COAL	.006444	.005564	.007174	.006413	.006739	.006926	.004911	.005574	.1009305	.004259	.004032	.007943	.007992	.006728	.007624	.005500
ROW 10 OIL AND GAS	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.015228	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 CRANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.223900	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.001001	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	.002071	.001679	.001941	.001947	.001693	.001820	.001617	.001509	.006389	.001566	.015813	.002312	.1002887	.001780	.001724	.001577
ROW 14 FOOD AND KITCHEN	.054291	.214984	.091207	.052823	.049257	.049950	.047250	.147214	.046963	.024890	.031206	.037764	.052964	.1100811	.047326	.038477
ROW 15 LUMBER AND WOOD	.001494	.001327	.000728	.000759	.000686	.001701	.000675	.000777	.000672	.000387	.002895	.000539	.000760	.001042	.1000681	.000567
ROW 16 PRINTING PUBLISHING	.014464	.012220	.013400	.014011	.015447	.016016	.011428	.010721	.012104	.008420	.007630	.008765	.019727	.014241	.011714	.1026744
ROW 17 FABRICATED METALS	.000244	.000206	.000255	.000290	.000241	.000235	.000194	.000144	.000273	.000195	.006448	.017233	.012253	.000233	.000237	.000141
ROW 18 STONE CLAY GLASS	.002593	.002101	.002476	.002440	.002140	.002295	.002037	.001899	.020117	.001712	.001381	.001985	.002397	.002225	.002183	.001944
ROW 19 ALL OTHER MANUFACTURING	.037457	.035381	.048393	.092780	.058506	.041516	.034168	.026491	.024187	.026562	.027710	.019075	.021856	.042889	.044110	.016003
ROW 20 WHOLESALE TRADE	.046496	.040409	.045400	.049899	.045645	.044502	.038738	.037374	.031699	.032544	.027447	.031333	.050766	.045126	.038105	.028411
ROW 21 SERVICE STATIONS	.019895	.017390	.019995	.030969	.013833	.016112	.019104	.020922	.007173	.010576	.008237	.005693	.009007	.020277	.018994	.006941
ROW 22 ALL OTHER RETAIL	.178929	.143749	.157202	.167866	.169861	.159431	.143331	.127244	.135520	.082626	.091658	.109005	.156759	.144450	.141516	.115444
ROW 23 EATING DRINKING PLACES	.031841	.025834	.028929	.030109	.027181	.027412	.026961	.023514	.026781	.015204	.017930	.021547	.030169	.027611	.027149	.022744
ROW 24 AGRICULTURE SERVICES	.031344	.043291	.117884	.075861	.433113	.457178	.002480	.037021	.002485	.001303	.001634	.001982	.002780	.050203	.002483	.002014
ROW 25 LOGGING	.002305	.002052	.002014	.002363	.002090	.002075	.002023	.001844	.001995	.002098	.001352	.001907	.002251	.003048	.002050	.001674
ROW 26 ALL OTHER SERVICES	.055848	.049383	.050160	.062224	.049517	.053694	.045227	.047274	.044078	.070950	.035149	.037473	.053039	.054239	.054299	.043007
ROW 27 TRANSPORTATION	.069291	.083144	.109349	.070982	.050759	.051663	.045341	.067614	.043992	.052474	.149484	.035475	.051386	.065519	.164440	.043117
ROW 28 ELECTRIC ENERGY	.031903	.029133	.042841	.032865	.038979	.039954	.021771	.030944	.053998	.026295	.021793	.056140	.047656	.039013	.047314	.031744
ROW 29 OTHER UTILITIES	.042301	.035462	.037550	.041419	.038412	.038861	.033987	.036414	.044078	.023058	.026755	.031281	.048357	.041969	.042212	.043424
ROW 30 CONTRACT CONSTRUCTIONS	.064617	.052745	.058873	.062049	.054765	.057067	.052898	.048044	.053052	.055655	.037305	.043233	.060621	.056483	.055452	.049744
ROW 31 RENTALS AND FINANCE	.196467	.170432	.166266	.153752	.151622	.147759	.148090	.135694	.143143	.159271	.085287	.099855	.149672	.153423	.155862	.121244
ROW 32 HOUSEHOLD	.1094848	.887318	.915039	.1067475	.966025	.976261	.963506	.826387	.957676	.497406	.435898	.770546	.1079110	.930805	.962934	.777744
ROW 33 LOCAL	.196983	.157546	.224803	.172048	.137273	.168782	.125709	.132774	.126649	.116787	.078302	.091353	.155172	.161309	.142488	.140644

TABLE C-7. - UPPER MAIN STEM 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
ROW 1 RANGE LIVESTOCK	.010110	.014657	.007061	.009867	.021581	.020953	.053223	.024469	.025802	.020079	.013738	.014769	.022701	.012969	.021568	.027268	.017703
ROW 2 FEEDER LIVESTOCK	.007308	.010596	.005101	.007135	.015595	.015145	.042151	.010588	.019560	.014619	.009933	.010989	.016449	.009374	.015568	.010609	.012875
ROW 3 DAIRY	.001503	.002179	.001049	.001567	.003207	.003114	.000589	.002204	.004003	.003004	.002042	.002198	.003381	.001927	.003201	.004060	.002548
ROW 4 FOND FIELD CROPS	.001974	.002462	.001377	.001927	.004212	.004090	.011123	.002880	.005210	.003941	.002683	.002886	.004440	.002532	.004205	.003390	.003472
ROW 5 TRUCK CROPS	.000204	.000426	.000202	.000287	.000629	.000610	.000655	.000360	.000536	.000559	.000369	.000427	.000651	.000378	.000629	.000790	.000404
ROW 6 FRUIT	.001542	.002236	.001075	.001505	.003292	.003197	.000358	.002267	.003995	.003070	.002096	.002254	.003466	.001978	.003287	.004140	.002786
ROW 7 FORESTY	.000161	.000236	.000113	.000159	.000341	.000333	.000245	.000211	.000272	.000318	.000217	.000247	.000421	.000743	.000336	.000421	.000344
ROW 8 ALL OTHER AGRICULTURE	.001555	.002250	.001074	.001514	.003317	.003219	.005826	.002140	.003383	.003017	.002108	.002260	.003461	.001992	.003315	.004280	.002667
ROW 9 COAL	.004955	.009266	.004563	.003705	.009888	.008338	.006701	.006800	.010450	.011610	.004613	.120000	.013907	.004245	.007172	.007744	.002252
ROW 10 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 11 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 ZINC	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 ALL OTHER MINING	.001164	.261040	.000951	.001216	.002363	.002412	.002173	.001340	.002525	.002808	.001532	.002756	.005404	.031429	.002124	.002448	.005557
ROW 14 FOOD AND KINDRED	.029117	.042214	.020321	.028426	.062133	.060337	.167932	.042174	.077929	.058243	.039575	.042584	.065535	.037346	.062023	.078400	.051290
ROW 15 LUMBER AND WOOD	.000425	.000621	.000297	.000415	.000896	.000876	.000846	.000594	.000716	.000836	.000570	.000851	.001107	.001955	.000883	.001107	.000963
ROW 16 PRINTING PUBLISHING	.000362	.016499	.000100	.007219	.015886	.074912	.020037	.014414	.014693	.021429	.011193	.012017	.024357	.009330	.010590	.017679	.015117
ROW 17 FABRICATED METALS	1.001193	.003377	.001123	.000148	.000289	.000283	.000259	.000200	.000307	.000323	.000286	.001357	.000538	.003375	.000230	.000246	.000491
ROW 18 STONE CLAY GLASS	.001467	1.002261	.001098	.001130	.002915	.002917	.002398	.001740	.002872	.003433	.001852	.004764	.006108	.024384	.002645	.003102	.000703
ROW 19 ALL OTHER MANUFACTURING	.073409	.070001	1.013859	.020827	.023438	.026724	.018421	.039870	.018375	.029217	.129428	.022733	.034875	.036188	.018827	.020200	.027307
ROW 20 WHOLESALE TRADE	.021322	.036524	.010933	1.022562	.043451	.044819	.075981	.035987	.040026	.054405	.030870	.031509	.053211	.031587	.042451	.051800	.043759
ROW 21 SERVICE STATIONS	.005699	.013279	.004376	.007274	1.010172	.011242	.009050	.014011	.007738	.008772	.025827	.007842	.011707	.010493	.010243	.011548	.009827
ROW 22 ALL OTHER RETAIL	.005919	.123704	.000405	.003917	.181969	1.178185	.129890	.113800	.147702	.164861	.117078	.123916	.189326	.110392	.181611	.226327	.143231
ROW 23 EATING DRINKING PLACES	.016709	.024159	.013755	.017254	.036368	.035444	1.022646	.021724	.020410	.032145	.023817	.025108	.037678	.022683	.036257	.044801	.027077
ROW 24 AGRICULTURE SERVICES	.001527	.002214	.001063	.001490	.003260	.003165	.007889	1.003400	.003860	.003029	.002075	.002230	.003427	.001959	.003255	.004110	.002671
ROW 25 LOGGING	.001344	.001893	.002060	.002218	.002616	.002554	.001856	.001667	1.004026	.002335	.001896	.001790	.003730	.001604	.002602	.003280	.002867
ROW 26 ALL OTHER SERVICES	.038497	.049469	.023707	.042031	.075057	.084472	.049706	.043920	.089885	1.093787	.073605	.055476	.094857	.046710	.067909	.068300	.074107
ROW 27 TRANSPORTATION	.041027	.068900	.035254	.129111	.101867	.111625	.055636	.040874	.053128	.066376	1.070224	.051020	.082846	.058079	.057476	.060640	.080390
ROW 28 ELECTRIC ENERGY	.021439	.045300	.023128	.019725	.001047	.004627	.041586	.045171	.062502	.067919	.022541	1.142846	.041235	.020225	.035519	.033000	.035202
ROW 29 OTHER UTILITIES	.026765	.045456	.021110	.029754	.058376	.063080	.057136	.033174	.085638	.073703	.033499	.044428	1.063212	.032005	.054331	.054506	.043266
ROW 30 CONTRACT CONSTRUCTIONS	.003907	.053670	.003619	.002199	.079276	.001679	.079579	.043774	.088870	.084022	.052094	.084269	.164357	1.467861	.072123	.082916	.123545
ROW 31 RENTALS AND FINANCE	.084228	.139364	.072071	.129065	.199556	.239569	.139292	.120301	.170735	.195807	.124934	.154705	.249086	.126880	1.184739	.194810	.251937
ROW 32 HOUSEHOLD	.590280	.855156	.404155	.574327	1.262879	1.224545	.796956	.772344	.935665	1.106879	.000480	.854170	1.300413	.757600	1.263252	1.604371	.984152
ROW 33 LOCAL	.114856	.187293	.062644	.084290	.172080	.177185	.131122	.110300	.178646	.324983	.110215	.284323	.681807	.005695	.140577	.150894	1.143584

TABLE C-8

THE SAN JUAN SUB-BASIN DETAILED INDUSTRY CLASSIFICATION

<u>Industry</u>	<u>Standard Industry Classification</u> ^{a/}
1. Range Livestock	013 except 0139, 0133, 0132
2. Dairy	0132
3. Field Crops	011
4. Fruit	0122
5. Forestry	081-82, 084-86
6. All Other Agriculture	014, 019, 021, 012 except 0122, 0139 and 0133
7. Coal	11, 12
8. Oil and Gas	13 except 138
9. Uranium	1094
10. All Other Mining	10 except 1094, 14
11. Food and Kindred Products	20
12. Lumber and Wood Products	24
13. Printing and Publishing	27
14. Stone, Clay and Glass	32
15. All Other Manufacturing	22, 23, 28, 29, 31, 33, 34, 35, 39 ^{a/}
16. Wholesale Trade	50
17. Service Stations	554
18. All Other Retail	Parts 52-59, except 554, 581
19. Eating and Drinking Places	581
20. Agricultural Services	07
21. Oil Field Services	138
22. Lodging	70
23. All Other Services (Except Professional)	72, 73, 75-79, 483, 80-86 except 801-804
24. Transportation	40, 41, 42, 44-47
25. Electric Energy	491
26. Other Utilities	48-49 except 483, 491
27. Contract Construction	151, 161-2, 17
28. Rentals and Finance	60-67
29. Households	80, 81, 88

^{a/} SIC 25, 26, 30, 36, 37, 38, 19 might appear in 1980. To our knowledge there were none of these industries in 1963.

Source: Standard Industrial Classification Manual, 1957, Bureau of the Budget, Washington, D.C.

TABLE C-9. - SAN JUAN 1963 GROSS FLOWS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	817	151	0	0	0	52	0	0	0	0	232	0	0	0	0	0
ROW 2 DAIRY	5	9	0	0	0	26	0	0	0	0	1199	0	0	0	0	0
ROW 3 FIELD CROPS	0	0	0	0	0	19	0	0	0	0	377	0	0	0	0	0
ROW 4 FRUIT	7	6	0	0	0	0	0	0	0	0	68	0	0	0	0	0
ROW 5 FORESTRY	6	0	0	0	0	0	0	0	0	547	0	1409	0	0	0	0
ROW 6 ALL OTHER AGRICULTURE	3	0	2	0	0	0	0	0	0	0	282	0	0	0	0	0
ROW 7 COAL	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
ROW 8 OIL AND GAS	0	0	0	0	0	0	0	2830	0	0	0	0	0	0	1736	0
ROW 9 URANIUM	0	0	0	0	0	0	0	0	12056	0	0	0	0	0	0	0
ROW 10 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	683	0	0	0	106	742	0
ROW 11 FOOD AND KINDRED	56	0	0	0	0	25	0	0	0	0	98	0	0	0	0	0
ROW 12 LUMBER AND WOOD	2	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0
ROW 13 PRINTING PUBLISHING	32	2	5	1	0	1	1	79	41	1	60	5	19	4	10	20
ROW 14 STONE CLAY GLASS	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
ROW 15 ALL OTHER MANUFACTURING	55	3	19	3	4	4	1	274	101	47	10	10	10	29	174	44
ROW 16 WHOLESALE TRADE	94	9	32	2	13	10	1	201	249	15	13	10	8	25	32	39
ROW 17 SERVICE STATIONS	109	10	34	3	24	11	1	22	0	20	6	1	6	2	2	14
ROW 18 ALL OTHER RETAIL	193	10	102	4	16	42	5	232	107	17	22	22	16	20	30	45
ROW 19 EATING DRINKING PLACES	7	0	0	0	0	0	0	80	1	4	1	1	1	0	5	24
ROW 20 AGRICULTURE SERVICES	342	63	33	321	0	5	0	0	0	0	0	0	0	0	0	0
ROW 21 OIL FIELD SERVICES	0	0	0	0	0	0	0	4594	0	0	0	0	0	0	0	0
ROW 22 LODGING	2	0	0	0	0	0	0	45	1	0	0	0	0	0	2	13
ROW 23 ALL OTHER SERVICES	126	73	35	7	0	2	12	544	113	73	119	125	31	50	100	347
ROW 24 TRANSPORTATION	176	158	5	0	0	10	0	300	5926	0	44	67	30	17	309	2224
ROW 25 ELECTRIC ENERGY	75	20	13	2	0	6	1	792	109	107	60	77	20	37	100	105
ROW 26 OTHER UTILITIES	40	7	9	1	0	4	1	40	134	62	87	10	31	53	86	497
ROW 27 CONTRACT CONSTRUCTIONS	0	0	0	0	0	0	0	181	0	0	3	5	0	3	64	24
ROW 28 RENTALS AND FINANCE	320	36	41	6	43	12	2	2081	166	255	394	62	112	84	163	600
ROW 29 HOUSEHOLD	8207	914	2464	202	1350	287	89	10892	8457	2171	2340	2092	1114	447	2201	8431
ROW 30 LOCAL	1250	95	122	12	51	10	5	1050	197	127	31	40	22	34	51	274
ROW 31 STATE AND FEDERAL	292	7	9	3	299	4	11	3115	440	83	371	216	40	70	105	803
ROW 32 INVENTORY CHANGE	359	36	0	0	0	0	0	0	0	281	528	691	90	496	1011	3126
ROW 33 DEPRECIATION	1147	141	212	51	57	33	2	53193	5104	719	510	13	157	439	713	870
ROW 34 IMPORTS WITHIN BASIN	189	16	20	5	20	45	11	840	5223	426	515	85	51	115	521	67
ROW 35 IMPORTS OUTSIDE BASIN	1602	113	479	39	157	254	42	88700	14010	2310	1475	482	970	1430	7136	5040
ROW 36 TOTAL GROSS OUTLAY	15522	1888	3645	664	2052	877	108	170008	52648	8028	8877	5440	2748	4003	16428	22775

TABLE C-9. - SAN JUAN 1963 GROSS FLOWS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	Households 29	Local Gov't 30	State & Fed. Gov't 31	Inventory Accum. 32
ROW 1 RANGE LIVESTOCK	0	0	0	144	0	0	0	0	0	0	0	0	318	0	723	0
ROW 2 DAIRY	0	0	0	0	0	0	0	0	0	0	0	0	30	0	19	0
ROW 3 FIELD CROPS	0	0	0	0	0	0	0	0	0	0	0	0	39	0	447	0
ROW 4 FRUIT	0	0	0	0	0	0	0	0	0	0	0	0	45	0	5	0
ROW 5 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0
ROW 6 ALL OTHER AGRICULTURE	0	0	0	0	0	0	0	0	0	0	0	0	105	0	2	0
ROW 7 COAL	0	0	0	0	0	0	8	22	74	0	0	0	56	6	0	0
ROW 8 OIL AND GAS	0	0	0	0	300	0	0	13	202	2977	26	0	0	18	21	0
ROW 9 URANIUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28594	0
ROW 10 ALL OTHER MINING	0	0	0	0	16	0	0	0	0	0	572	0	38	47	110	237
ROW 11 FOOD AND KINDRED	0	0	537	0	0	164	45	13	0	2	1	16	5449	32	104	870
ROW 12 LUMBER AND WOOD	0	11	0	0	0	0	0	0	0	0	1979	0	401	12	5	784
ROW 13 PRINTING PUBLISHING	75	1241	63	14	32	52	58	94	25	28	40	187	366	24	35	64
ROW 14 STONE CLAY GLASS	0	3	0	0	0	0	0	0	0	0	2719	0	278	61	92	784
ROW 15 ALL OTHER MANUFACTURING	11	104	51	3	248	9	38	1560	17	14	545	93	2198	137	607	2400
ROW 16 WHOLESALE TRADE	3	56	199	10	598	14	195	1014	18	13	438	67	3872	194	363	3789
ROW 17 SERVICE STATIONS	1	31	3	6	119	6	14	894	1	4	19	37	1103	15	51	177
ROW 18 ALL OTHER RETAIL	11	102	116	6	83	37	48	144	23	34	824	96	20911	194	173	6154
ROW 19 EATING DRINKING PLACES	1	24	1	0	67	9	15	112	2	14	39	72	3068	15	90	195
ROW 20 AGRICULTURE SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 21 OIL FIELD SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	710
ROW 22 LODGING	0	19	1	0	43	14	9	87	1	4	22	17	493	2	25	931
ROW 23 ALL OTHER SERVICES	162	1020	184	10	761	337	362	1151	129	80	1809	750	5112	477	409	854
ROW 24 TRANSPORTATION	87	1944	74	0	1619	5	382	5713	57	84	1777	8	13211	476	724	0
ROW 25 ELECTRIC ENERGY	114	439	130	26	163	158	184	99	1078	50	86	187	2649	432	339	0
ROW 26 OTHER UTILITIES	239	554	178	6	121	351	211	768	65	118	221	385	5764	286	641	3248
ROW 27 CONTRACT CONSTRUCTIONS	7	104	16	0	1635	106	6	53	0	34	15150	117	814	3202	8051	1480
ROW 28 RENTALS AND FINANCE	235	1693	534	13	413	216	791	1440	866	185	1091	1665	8323	1266	1737	1575
ROW 29 HOUSEHOLD	1860	16346	2856	236	8085	1779	8116	18205	1596	3393	10585	17211	5027	10147	15906	0
ROW 30 LOCAL	52	367	109	20	117	197	117	937	152	292	86	320	6581	437	8342	0
ROW 31 STATE AND FEDERAL	103	573	132	6	750	39	49	2937	117	35	723	1578	32729	321	8094	0
ROW 32 INVENTORY CHANGE	169	5844	207	0	563	427	983	0	0	3227	1441	1195	0	0	0	0
ROW 33 DEPRECIATION	154	1139	353	65	2171	1111	948	9323	538	912	4265	967	1128	473	0	0
ROW 34 IMPORTS WITHIN BASIN	0	737	321	26	648	291	2325	1615	2749	554	2559	141	1651	463	290	24
ROW 35 IMPORTS OUTSIDE BASIN	324	1851	3219	171	16631	1773	2180	13759	339	2576	7778	4390	57532	4316	7049	28209
ROW 36 TOTAL GROSS OUTLAY	3608	34204	9284	764	35182	7192	17045	60021	8050	14634	54886	29498	178460	23553	83206	52420

TABLE C-9. - SAN JUAN 1963 GROSS FLOWS (Cont.)

COLUMN	Gross Priv. Invest.	Exports to Calo. B. Sub-Basin 34	Export to Rest of World 35	Total Output
	33			36
ROW 1 RANGE LIVESTOCK	42	1588	11435	19522
ROW 2 DAIRY	0	0	611	1888
ROW 3 FIELD CROPS	0	393	2349	3645
ROW 4 FRUIT	0	190	373	664
ROW 5 FORESTAY	0	81	0	2852
ROW 6 ALL OTHER AGRICULTURE	0	105	317	877
ROW 7 COAL	0	0	30	198
ROW 8 OIL AND GAS	0	7161	195616	176908
ROW 9 URANIUM	0	8031	3967	52648
ROW 10 ALL OTHER MINING	0	119	5349	8828
ROW 11 FOOD AND KINDRED	0	225	1238	8877
ROW 12 LUMBER AND WOOD	0	46	2195	5440
ROW 13 PRINTING PUBLISHING	0	14	36	2748
ROW 14 STONE CLAY GLASS	0	43	182	4893
ROW 15 ALL OTHER MANUFACTURING	485	312	6585	16428
ROW 16 WHOLESALE TRADE	1291	3736	6872	22775
ROW 17 SERVICE STATIONS	0	65	781	3608
ROW 18 ALL OTHER RETAIL	1203	887	3148	34206
ROW 19 EATING DRINKING PLACES	0	409	5823	9284
ROW 20 AGRICULTURE SERVICES	0	0	0	765
ROW 21 OIL FIELD SERVICES	29869	0	0	35182
ROW 22 LODGING	0	337	5121	7192
ROW 23 ALL OTHER SERVICES	385	351	1913	17895
ROW 24 TRANSPORTATION	0	3211	21287	68821
ROW 25 ELECTRIC ENERGY	32	87	142	8850
ROW 26 OTHER UTILITIES	0	189	259	14634
ROW 27 CONTRACT CONSTRUCTIONS	16395	4837	2598	54886
ROW 28 RENTALS AND FINANCE	994	31	1962	29498
ROW 29 HOUSEHOLD	1115	2259	2809	178660
ROW 30 LOCAL	0	143	882	23553
ROW 31 STATE AND FEDERAL	0	177	346	54495
ROW 32 INVENTORY CHANGE	0	0	0	21903
ROW 33 DEPRECIATION	0	0	0	87187
ROW 34 IMPORTS WITHIN BASINS	6611	56	222	29576
ROW 35 IMPORTS OUTSIDE BASIN	48023	12302	25394	354369
ROW 36 TOTAL GROSS OUTLAY	98366	47277	266463	1340956

TABLE C-10. - SAN JUAN 1963 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	.053880	.081502	0.000000	0.000000	0.000000	.059311	0.000000	0.000000	0.000000	0.000000	.336183	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 2 DAIRY	.000338	.004258	0.000000	0.000000	0.000000	.029655	0.000000	0.000000	0.000000	0.000000	.142480	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	.021351	0.000000	0.000000	0.000000	0.000000	.045209	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 4 FRUIT	.000473	.003021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.008172	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 5 FORESTRY	.000406	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.370533	0.000000	.296770	0.000000	0.000000	0.000000	0.000000
ROW 6 ALL OTHER AGRICULTURE	.000403	0.000000	.000369	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.033442	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 7 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000132	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.016011	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.119575	0.000000
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.228994	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.088155	0.000000	0.000000	0.000000	.031250	.051121
ROW 11 FOOD AND KINDRED	.003718	0.000000	0.000000	0.000000	0.000000	.028469	0.000000	0.000000	0.000000	0.000000	.011730	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 LUMBER AND WOOD	.000135	0.000000	0.000000	0.000000	0.000000	0.000000	.000093	0.000000	.000056	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 PRINTING PUBLISHING	.002096	.001217	.001422	.001560	0.000000	.001186	.006093	.000463	.000788	.000136	.008172	.001084	.007299	.001316	.000855	.001496
ROW 14 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000037	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 15 ALL OTHER MANUFACTURING	.003651	.001824	.004830	.004680	.002046	.004744	.006093	.001604	.003433	.006112	.002109	.002168	.003864	.008553	.012016	.002327
ROW 16 WHOLESALE TRADE	.006219	.004258	.008819	.003120	.006138	.011862	.006093	.001645	.004727	.001902	.001582	.003680	.002146	.007237	.002185	.001602
ROW 17 SERVICE STATIONS	.007166	.005474	.004388	.004680	.011765	.013048	.006093	.000127	.000150	.002501	.000659	.000211	.002146	.000650	.000146	.000831
ROW 18 ALL OTHER RETAIL	.012709	.009737	.027880	.006240	.007672	.047449	.024385	.001395	.002026	.002173	.002636	.004554	.006011	.005921	.002022	.002271
ROW 19 EATING DRINKING PLACES	.000473	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000459	.000019	.000543	.000132	.000217	.000429	0.000000	.000364	.001219
ROW 20 AGRICULTURE SERVICES	.022580	.034063	.009104	.083619	0.000000	.005930	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 21 OIL FIELD SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.029881	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 22 LODGING	.000135	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000291	.000019	0.000000	0.000000	0.000000	0.000000	0.000000	.000146	.000805
ROW 23 ALL OTHER SERVICES	.008315	.039538	.009673	.010919	0.000000	.002372	.060971	.003197	.002139	.009372	.014235	.026230	.011593	.017105	.010341	.017672
ROW 24 TRANSPORTATION	.011628	.005158	.001422	0.000000	0.000000	.017793	0.000000	.001755	.112556	0.000000	.005272	.014091	.011163	.004934	.021264	.113179
ROW 25 ELECTRIC ENERGY	.004435	.010949	.003698	.003120	0.000000	.007116	.006093	.004107	.003583	.024178	.007908	.016258	.007728	.010855	.007428	.007807
ROW 26 OTHER UTILITIES	.002636	.003649	.002560	.001560	0.000000	.004744	.006093	.000270	.002551	.000814	.019412	.002109	.011593	.015460	.005899	.025317
ROW 27 CONTRACT CONSTRUCTIONS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001090	0.000000	0.000000	.000395	.001044	0.000000	.000987	.004442	.001219
ROW 28 RENTALS AND FINANCE	.021092	.019464	.011380	.009357	.020972	.014234	.012190	.012175	.003152	.032871	.047186	.013907	.042078	.024671	.011215	.035067
ROW 29 HOUSEHOLD	.541238	.495742	.875460	.304211	.661893	.327402	.451219	.063202	.160636	.280223	.440216	.440444	.420352	.141579	.157807	.429002
ROW 30 LOCAL	.082900	.051209	.033400	.018000	.024800	.020500	.025200	.010900	.003700	.016300	.003700	.010100	.008200	.010000	.003500	.014000

TABLE C-10. - SAN JUAN 1963 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ROW 1 RANGE LIVESTOCK	0.000000	0.000000	0.000000	.108605	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001742	0.000000
ROW 2 DAIRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000166	0.000000
ROW 3 FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000219	0.000000
ROW 4 FRUIT	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000254	0.000000
ROW 5 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000042	0.000000
ROW 6 ALL OTHER AGRICULTURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000026	0.000000
ROW 7 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.000496	.000373	.000491	0.000000	0.000000	0.000000	.000316	.000200
ROW 8 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	.000655	0.000000	0.000000	.000241	.025123	.260996	.000481	0.000000	0.000000	.000700
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	.000457	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.010718	0.000000	.001900
ROW 11 FOOD AND KINDRED	0.000000	0.000000	.059201	0.000000	0.000000	.024666	.002762	.000241	0.000000	.000193	.000021	.000561	.030534	.001300
ROW 12 LUMBER AND WOOD	0.000000	.000403	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.037063	0.000000	.002248	.000500
ROW 13 PRINTING PUBLISHING	.021802	.043772	.006907	.018990	.000914	.007763	.003612	.001560	.003064	.002417	.000752	.006603	.002048	.001000
ROW 14 STONE CLAY GLASS	0.000000	.000121	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.050915	0.000000	.001558	.002500
ROW 15 ALL OTHER MANUFACTURING	.003206	.003745	.005673	.004069	.007158	.001380	.002337	.025904	.002144	.001257	.010948	.003281	.012319	.005800
ROW 16 WHOLESALE TRADE	.000962	.001973	.021954	.013560	.017285	.002070	.012110	.016927	.002298	.001160	.008211	.002350	.021694	.008200
ROW 17 SERVICE STATIONS	.000320	.001087	.000379	.000149	.003452	.000962	.000850	.014959	.000153	.000387	.000355	.001298	.006180	.000600
ROW 18 ALL OTHER RETAIL	.003206	.003584	.012827	.000149	.002386	.005520	.003612	.002459	.002910	.002997	.015440	.003403	.112132	.008200
ROW 19 EATING DRINKING PLACES	.000320	.000926	.000123	0.000000	.001929	.001380	.000921	.001866	.000366	.001257	.000731	.002552	.017190	.000600
ROW 20 AGRICULTURE SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 21 OIL FIELD SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 22 LODGING	0.000000	.000065	.000123	0.000000	.001244	.002070	.000567	.001442	.000153	.000387	.000418	.000608	.002765	0.000000
ROW 23 ALL OTHER SERVICES	.047130	.035960	.026227	.013560	.021980	.050543	.022450	.019182	.016084	.007056	.033848	.026494	.028645	.020200
ROW 24 TRANSPORTATION	.025328	.068538	.008140	0.000000	.046778	.000690	.021813	.095183	.007947	.007540	.033282	.000284	.074028	.028700
ROW 25 ELECTRIC ENERGY	.033023	.015403	.014307	.033921	.004695	.023633	.011402	.001645	.133885	.004350	.001609	.006603	.014843	.018300
ROW 26 OTHER UTILITIES	.069973	.019531	.019610	.000144	.003503	.052613	.013102	.012748	.008119	.010343	.004137	.013611	.032299	.012100
ROW 27 CONTRACT CONSTRUCTION	.001923	.003605	.001727	0.000000	.047235	.015870	.000354	.000882	0.000000	.002997	.283741	.004134	.004564	.135900
ROW 28 RENTALS AND FINANCE	.068291	.059679	.058831	.017630	.011929	.032430	.049009	.023999	.107537	.016240	.020433	.058821	.046641	.053700
ROW 29 HOUSEHOLD	.540479	.576330	.314628	.308004	.233534	.256862	.502833	.304308	.198223	.297438	.198249	.608104	.028170	.430800
ROW 30 LOCAL	.015100	.012900	.012000	.026200	.003300	.029500	.007200	.015600	.018800	.025500	.001600	.011300	.035400	.027600

TABLE C-11. - SAN JUAN 1963 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVES CR	1.065431	.0497537	.005571	.049743	.003500	.070927	.002719	.000476	.001418	.002096	.051867	.003400	.002397	.001000	.001135	.002604
ROW 2 DAIRY	.005009	1.000007	.005040	.004006	.004772	.037437	.003723	.000655	.001740	.002806	.149527	.004736	.003275	.001371	.001554	.003649
ROW 3 FIELD CROPS	.001044	.001642	1.001804	.001430	.001645	.023909	.001321	.000232	.000088	.001117	.047784	.001680	.001162	.000486	.000551	.001244
ROW 4 FRUIT	.001050	.003619	.000557	1.000400	.000525	.000751	.000408	.000071	.000413	.000314	.000433	.000520	.000359	.000150	.000170	.000339
ROW 5 FISH/SEA	.001716	.001267	.001145	.001025	1.001084	.000875	.002692	.000217	.000484	.074153	.000840	.247844	.000736	.002804	.004440	.000800
ROW 6 ALL OTHER AGRICULTURE	.002083	.001906	.002670	.001644	.001982	1.002435	.001541	.000270	.000093	.001107	.035043	.001953	.001358	.000567	.000643	.001510
ROW 7 COAL	.000704	.000401	.000730	.000750	.000612	.000568	1.000587	.000138	.000364	.000639	.000725	.000749	.000512	.000320	.000316	.000611
ROW 8 OIL AND GAS	.015718	.016716	.016417	.015114	.014212	.013297	.013868	1.019652	.008402	.012574	.014530	.015300	.013533	.010002	.012945	.010406
ROW 9 MINING	.000000	.000000	.000000	.000000	.000000	.000000	.000000	.000000	.000000	1.247207	.000000	.000000	.000000	.000000	.000000	.000000
ROW 10 ALL OTHER MINING	.002637	.002144	.002133	.001911	.001787	.001439	.001705	.000445	.001165	1.049116	.001475	.001820	.001354	.035400	.057444	.001418
ROW 11 FOOD AND ALCOHOL	.035008	.031527	.033720	.026900	.031792	.052005	.024808	.004307	.012424	.019095	1.003650	.031527	.021818	.009136	.010357	.024317
ROW 12 LUMBER AND WOOD	.003000	.003356	.003341	.002741	.003084	.002363	.008554	.000607	.001314	.001407	.002328	1.003900	.002061	.000983	.001242	.002407
ROW 13 MINING EQUIPMENT	.012531	.012142	.012547	.019500	.009534	.011023	.014621	.001937	.005171	.006114	.016473	.010566	1.014121	.004548	.004016	.003942
ROW 14 STEEL AND ALLOYS	.003360	.003202	.003087	.002544	.002813	.002215	.002283	.000636	.001173	.001772	.002134	.002706	.001842	1.003260	.001244	.002244
ROW 15 ALL OTHER MANUFACTURING	.021074	.022201	.023140	.021750	.019034	.018750	.019775	.004436	.015041	.017507	.014400	.020000	.015968	.014216	1.019060	.010726
ROW 16 WHOLESALE TRADE	.033216	.033238	.033604	.032316	.031694	.032129	.026935	.005906	.014331	.018243	.032337	.031300	.021056	.015209	.011573	1.023543
ROW 17 SERVICE STATIONS	.016094	.016074	.018144	.016260	.019897	.020440	.012577	.001420	.005431	.008578	.009254	.012010	.007961	.003287	.003408	.004443
ROW 18 ALL OTHER RETAIL	.124053	.123420	.127977	.106320	.120748	.131328	.112466	.016907	.049800	.070442	.015440	.114803	.083528	.038620	.034022	.008604
ROW 19 RETAIL WHOLESALE PLACES	.017187	.017042	.018743	.014800	.017635	.012881	.013768	.002909	.007400	.011200	.013300	.017714	.012616	.005181	.000248	.014445
ROW 20 AGRICULTURAL SERVICES	.024406	.034832	.009704	.046270	.000522	.009402	.000407	.000071	.000412	.000513	.011327	.000510	.000358	.000150	.000170	.000334
ROW 21 OIL FIELD SERVICES	.000423	.000409	.000441	.000400	.000382	.000357	.000373	.027409	.000626	.000338	.000391	.000411	.000304	.000254	.000404	.000504
ROW 22 LOGGING	.003200	.003237	.003246	.002630	.003088	.002327	.002454	.000738	.001320	.001401	.002300	.003041	.002162	.000936	.001241	.003230
ROW 23 ALL OTHER SERVICES	.055149	.040308	.057570	.057300	.044012	.040544	.097935	.010807	.024700	.038387	.063320	.070500	.042966	.032108	.027171	.054704
ROW 24 TRANSPORTATION	.114444	.117557	.110110	.087701	.100059	.101678	.081400	.017797	.202112	.000550	.058444	.114900	.080839	.036215	.057381	.201445
ROW 25 ELECTRICITY ENERGY	.032766	.040604	.031214	.044775	.024501	.029187	.027575	.008670	.015743	.004570	.011145	.043010	.025912	.021340	.019079	.020347
ROW 26 OTHER UTILITIES	.045501	.044875	.047457	.042336	.042145	.038398	.040257	.006548	.022044	.006745	.049427	.044013	.044967	.028493	.020707	.050443
ROW 27 GOVERNMENT ACTIVITIES	.033742	.028444	.024346	.021810	.021401	.018411	.018232	.007896	.004314	.014216	.016944	.021444	.013420	.008799	.013538	.019112
ROW 28 RESEARCH AND DEVELOPMENT	.105114	.107401	.095744	.090981	.094054	.081194	.078286	.025451	.040145	.009447	.116444	.096524	.098343	.053232	.043064	.100304
ROW 29 MISCELLANEOUS	.052074	.040314	.103744	.017710	.080242	.070403	.075871	.132309	.094516	.040444	.022477	.089304	.670131	.278435	.316599	.742474
ROW 30 TOTAL	.135130	.104221	.092223	.078130	.064789	.063723	.061608	.017810	.025404	.004157	.052042	.002504	.034893	.025080	.021473	.051344

NOT REPRODUCIBLE

TABLE C-11. - SAN JUAN 1963 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMNA	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ROW 1 RANGE LIVESTOCK	.003411	.003553	.005132	.020862	.001580	.003185	.003042	.002881	.001790	.001836	.002146	.003452	.004936	.003084
ROW 2 DAIRY	.004669	.004863	.011678	.003684	.002174	.006318	.004378	.002877	.002457	.002530	.002949	.004774	.006723	.004215
ROW 3 FIELD CROPS	.001657	.001725	.003832	.001272	.000771	.002111	.001539	.001019	.000871	.000897	.001046	.001690	.002388	.001489
ROW 4 FRUIT	.000511	.000533	.000850	.000485	.000237	.000512	.000460	.000313	.000269	.000276	.000322	.000512	.000740	.000432
ROW 5 FORESTRY	.001092	.001276	.000743	.000974	.001333	.000934	.000883	.000783	.000622	.000673	.017403	.001109	.001414	.003542
ROW 6 ALL OTHER AGRICULTURE	.001933	.002013	.003283	.001518	.000896	.001963	.001741	.001182	.001015	.001042	.001217	.001900	.002795	.001711
ROW 7 COAL	.000992	.000839	.000582	.000851	.000367	.000649	.001146	.000828	.010957	.000393	.000477	.000680	.000833	.000957
ROW 8 OIL AND GAS	.034213	.021174	.016053	.014861	.017935	.023554	.016020	.016499	.040174	.276107	.014059	.017938	.018788	.018263
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	.001905	.002079	.001476	.001674	.002659	.001474	.001518	.002682	.001117	.001151	.020855	.001854	.002139	.006728
ROW 11 FOOD AND KINDRED	.031111	.032434	.080201	.024103	.014491	.043103	.029286	.019180	.016377	.016871	.019658	.031827	.044782	.028140
ROW 12 LUMBER AND WOOD	.003087	.003062	.002085	.002503	.003794	.002717	.002497	.001916	.001758	.001921	.053592	.003139	.004054	.018216
ROW 13 PRINTING PUBLISHING	.031749	.054101	.014421	.027318	.005583	.014107	.011733	.007861	.009385	.007612	.008248	.016020	.012238	.009950
ROW 14 STONE CLAY GLASS	.002447	.003141	.001931	.002405	.004570	.002973	.001225	.001801	.001625	.001931	.072894	.002904	.003495	.014696
ROW 15 ALL OTHER MANUFACTURING	.021073	.023437	.017487	.018039	.017271	.011956	.017239	.039461	.012137	.011131	.028464	.020072	.023257	.023864
ROW 16 WHOLESALE TRADE	.027293	.029886	.039186	.034421	.030717	.017893	.034076	.034398	.016714	.015595	.029629	.027739	.035419	.032742
ROW 17 SERVICE STATIONS	1.008861	.010601	.006048	.015794	.008046	.005723	.008052	.021404	.004746	.004873	.006720	.009315	.011306	.008281
ROW 18 ALL OTHER RETAIL	.113949	1.118837	.085366	.094169	.054452	.070114	.097544	.069601	.061924	.062564	.091800	.113929	.158885	.106623
ROW 19 EATING DRINKING PLACES	.017415	.019115	1.011547	.013133	.010068	.011501	.015710	.012570	.009724	.010647	.012054	.019886	.024726	.015790
ROW 20 AGRICULTURAL SERVICES	.000910	.000531	.000979	1.004906	.000237	.000565	.000465	.000312	.000288	.000275	.000321	.000518	.000736	.000454
ROW 21 OIL FIELD SERVICES	.000920	.000509	.000432	.000400	1.000482	.000633	.000431	.000444	.001780	.007422	.000378	.000484	.000505	.000491
ROW 22 LOADING	.003144	.003984	.002179	.002340	.002779	1.003901	.003209	.003466	.001868	.002166	.002621	.003665	.004308	.002793
ROW 23 ALL OTHER SERVICES	.094061	.084628	.052794	.050786	.046531	.080279	1.060804	.049776	.046101	.032325	.080725	.070810	.058472	.067642
ROW 24 TRANSPORTATION	.126704	.178030	.077634	.079929	.101881	.061103	.108072	1.167881	.061300	.062236	.117598	.097670	.137018	.125355
ROW 25 ELECTRIC ENERGY	.063238	.043698	.033910	.059957	.017432	.043163	.033765	.018084	1.168779	.019600	.021265	.031710	.032427	.043592
ROW 26 OTHER UTILITIES	.112819	.064457	.048960	.041652	.024515	.078815	.048955	.041196	.033063	1.032863	.035089	.055044	.056677	.058308
ROW 27 CONTRACT CONSTRUCTIONS	.023298	.025531	.016510	.021134	.074744	.038455	.016282	.015264	.014093	.019496	1.408226	.024649	.022759	.218131
ROW 28 RENTALS AND FINANCE	.155382	.147502	.119346	.088519	.052674	.087891	.117826	.077122	.173671	.062902	.086381	1.137869	.161613	.131873
ROW 29 HOUSEHOLD	.951930	.941502	.619365	.716224	.439004	.547183	.811636	.575984	.498466	.509169	.596999	.955379	1.383674	.820527
ROW 30 LOCAL	.062945	.061410	.043944	.078600	.025413	.058812	.045848	.045431	.047623	.053029	.033778	.055941	.061253	1.088453

TABLE C-12. - SAN JUAN 1980 GROSS FLOWS

COLUMA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	858	304	0	0	0	66	0	0	0	0	443	0	0	0	0	0
ROW 2 DAIRY	0	19	0	0	0	33	0	0	0	0	2749	0	0	0	0	0
ROW 3 FIELD CROPS	0	0	0	0	0	23	0	0	0	0	519	0	0	0	0	0
ROW 4 FRUIT	0	15	0	0	0	0	0	0	0	0	92	0	0	0	0	0
ROW 5 FORESTRY	0	0	0	0	0	0	0	0	0	696	0	1906	0	0	0	0
ROW 6 ALL OTHER AGRICULTURE	0	0	4	0	0	0	0	0	0	0	351	0	0	0	0	0
ROW 7 COAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 8 OIL AND GAS	0	0	0	0	0	0	0	2259	0	0	0	0	0	0	0	2701
ROW 9 URANIUM	0	0	0	0	0	0	0	0	11025	0	0	0	0	0	0	0
ROW 10 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	954	0	0	0	0	238	1170
ROW 11 FOOD AND KINDRED	71	0	0	0	0	31	0	0	0	0	214	0	0	0	0	0
ROW 12 LUMBER AND WOOD	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
ROW 13 PRINTING PUBLISHING	36	4	4	4	0	1	3	0	49	0	122	0	40	0	23	0
ROW 14 STONE CLAY GLASS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0
ROW 15 ALL OTHER MANUFACTURING	71	7	22	4	8	5	4	323	196	64	46	14	29	69	315	99
ROW 16 WHOLESALE TRADE	107	15	40	4	19	13	3	323	245	21	31	20	17	54	45	64
ROW 17 SERVICE STATIONS	125	22	40	4	32	15	4	161	0	32	15	0	11	0	23	33
ROW 18 ALL OTHER RETAIL	232	37	125	5	22	55	14	323	98	21	46	34	34	54	68	64
ROW 19 EATING DRINKING PLACES	18	0	0	0	0	0	0	101	0	11	0	0	0	0	0	33
ROW 20 AGRICULTURAL SERVICES	375	122	45	370	0	7	0	0	0	0	0	0	0	0	0	0
ROW 21 OIL FIELD SERVICES	0	0	0	0	0	0	0	4034	0	0	0	0	0	0	0	0
ROW 22 LODGING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
ROW 23 ALL OTHER SERVICES	143	148	45	4	3	2	35	404	98	96	229	173	74	138	248	591
ROW 24 TRANSPORTATION	214	334	4	0	0	20	0	323	5544	0	92	96	63	38	563	3743
ROW 25 ELECTRIC ENERGY	89	48	18	4	0	10	5	645	196	279	137	104	46	84	203	203
ROW 26 OTHER UTILITIES	54	15	13	2	0	5	3	0	147	86	168	14	69	123	135	821
ROW 27 CONTRACT CONSTRUCTIONS	0	0	0	0	0	0	0	161	0	0	15	13	0	0	90	33
ROW 28 RENTALS AND FINANCE	393	78	54	4	81	18	8	2420	147	354	764	40	246	192	203	1102
ROW 29 HOUSEHOLD	9446	1804	3026	247	1784	358	259	10197	7872	2896	4024	2460	2316	838	3139	12149
ROW 30 LOCAL	1756	224	181	10	79	27	18	2128	222	205	65	64	55	77	85	482
ROW 31 OTHER FINAL PAYMENTS	3478	514	856	137	669	407	392	137511	22427	5000	5149	1387	2736	5725	13407	13175
ROW 32 TOTAL GROSS OUTLAY	17866	3710	4477	914	2697	1096	669	161353	49066	10714	15271	6410	5736	7677	22508	32834

TABLE C-12. - SAN JUAN 1980 GROSS FLOWS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
													Households	Local Gov't	Final Demand	Total Output
ROW 1 RANGE LIVESTOCK	0	0	0	0	0	0	0	0	0	0	0	0	366	0	15030	17000
ROW 2 DAIRY	0	0	0	0	0	0	0	0	0	0	0	0	59	0	851	3710
ROW 3 FIELD CROPS	0	0	0	0	0	0	0	0	0	0	0	0	48	0	3887	4477
ROW 4 FRUIT	0	0	0	0	0	0	0	0	0	0	0	0	55	0	651	812
ROW 5 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	0	9	0	86	2697
ROW 6 ALL OTHER AGRICULTURE	0	0	0	0	0	0	0	0	0	0	0	0	286	0	534	1896
ROW 7 COAL	0	0	0	0	0	0	36	0	449	0	0	0	163	21	0	680
ROW 8 OIL AND GAS	0	0	0	0	101	0	0	66	660	7204	102	0	0	21	148240	161353
ROW 9 URANIUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37241	49086
ROW 10 ALL OTHER MINING	0	0	0	0	0	0	0	0	0	0	1224	0	51	76	7001	10714
ROW 11 FOOD AND KINDRED	0	0	1355	0	0	396	109	66	0	0	0	0	64	9374	67	15271
ROW 12 LUMBER AND WOOD	0	0	0	0	0	0	0	0	0	0	4080	0	473	17	1843	6416
ROW 13 PRINTING PUBLISHING	151	3195	123	17	17	127	146	133	79	76	102	384	761	61	0	5736
ROW 14 STONE CLAY GLASS	0	0	0	0	0	0	0	0	0	0	5507	0	521	138	1488	7677
ROW 15 ALL OTHER MANUFACTURING	25	290	141	4	118	16	109	1127	106	51	1122	250	3011	614	13636	22588
ROW 16 WHOLESALE TRADE	6	145	475	13	207	32	474	1129	79	25	810	120	5582	339	22275	37834
ROW 17 SERVICE STATIONS	0	73	18	8	68	16	36	996	0	25	102	64	1919	32	2387	6277
ROW 18 ALL OTHER RETAIL	19	290	299	7	34	95	146	199	79	76	1632	192	42488	499	25335	72623
ROW 19 EATING DRINKING PLACES	0	73	0	0	34	16	36	133	0	25	0	192	5017	34	11019	17602
ROW 20 AGRICULTURE SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	919
ROW 21 OIL FIELD SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12872	16000
ROW 22 LODGING	0	73	0	0	34	32	36	66	0	0	0	64	1087	5	14429	15859
ROW 23 ALL OTHER SERVICES	301	2614	370	14	338	809	839	1328	423	204	3570	1724	10911	1235	9267	36486
ROW 24 TRANSPORTATION	176	5302	194	0	761	16	803	6375	211	204	3468	0	14616	907	22342	60405
ROW 25 ELECTRIC ENERGY	207	1235	264	31	85	381	401	133	3539	102	204	448	8689	1719	5834	26456
ROW 26 OTHER UTILITIES	446	1452	352	7	68	841	474	803	211	255	510	897	10827	603	6792	25457
ROW 27 CONTRACT CONSTRUCTIONS	13	363	18	0	693	254	0	66	0	76	31412	250	1513	7217	59787	181987
ROW 28 RENTALS AND FINANCE	433	4357	1144	17	220	539	1788	1600	2852	433	2448	3778	18868	3334	16641	64036
ROW 29 HOUSEHOLD	3234	34703	5412	284	3881	3922	17319	20199	5237	5900	19668	37343	8927	18936	26774	274558
ROW 30 LOCAL	110	945	250	30	68	527	303	1257	605	616	194	842	12281	1384	19687	44798
ROW 31 OTHER FINAL PAYMENTS	2096	17515	7187	490	10099	7841	13431	30009	11877	10186	25612	17400	117537	7531	251124	776454
ROW 32 TOTAL GROSS OUTLAY	6277	72623	17602	914	16906	15859	36486	68405	26406	25457	101987	64030	274558	44790	117647	1,857,667

TABLE C-13. - SAN JUAN 1980 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	.040000	.082000	0.000000	0.000000	0.000000	.060000	0.000000	0.000000	0.000000	0.000000	.029000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 2 DAIRY	0.000000	.005000	0.000000	0.000000	0.000000	.030000	0.000000	0.000000	0.000000	0.000000	.180000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	.021000	0.000000	0.000000	0.000000	0.000000	.034000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 4 FRUIT	0.000000	.004000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.006000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 5 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.055000	0.000000	.297000	0.000000	0.000000	0.000000	0.000000
ROW 6 ALL OTHER AGRICULTURE	0.000000	0.000000	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.023000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 7 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.241000	0.000000	0.000000	0.000000	0.000000	0.000000	.120000	0.000000
ROW 10 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.089000	0.000000	0.000000	0.000000	.031000	.042000	0.000000
ROW 11 FOOD AND KINDRED	.004000	0.000000	0.000000	0.000000	0.000000	.028000	0.000000	0.000000	0.000000	0.000000	.014000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 12 LUMBER AND WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.006000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 13 PRINTING PUBLISHING	.002000	.001000	.001000	.002000	0.000000	.001000	.006000	0.000000	.001000	0.000000	.008000	.001000	.007000	.001000	.001000	.002000
ROW 14 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.003000	0.000000	0.000000
ROW 15 ALL OTHER MANUFACTURING	.004000	.002000	.005000	.005000	.003000	.005000	.007000	.002000	.004000	.006000	.003000	.003000	.005000	.009000	.014000	.003000
ROW 16 WHOLESALE TRADE	.006000	.004000	.009000	.003000	.007000	.012000	.006000	.002000	.005000	.002000	.002000	.004000	.003000	.007000	.002000	.002000
ROW 17 SERVICE STATIONS	.007000	.006000	.009000	.005000	.012000	.014000	.007000	.001000	0.000000	.003000	.001000	.001000	.002000	.001000	.001000	.001000
ROW 18 ALL OTHER RETAIL	.013000	.010000	.024000	.006000	.008000	.050000	.025000	.002000	.002000	.002000	.003000	.005000	.006000	.007000	.003000	.002000
ROW 19 EATING DRINKING PLACES	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000
ROW 20 AGRICULTURE SERVICES	.021000	.033000	.010000	.456000	0.000000	.004000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 21 OIL FIELD SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.025000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 22 LONGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000
ROW 23 ALL OTHER SERVICES	.000000	.040000	.010000	.011000	.001000	.002000	.061000	.003000	.002000	.009000	.015000	.027000	.013000	.018000	.011000	.018000
ROW 24 TRANSPORTATION	.012000	.090000	.001000	0.000000	0.000000	.018000	0.000000	.002000	.113000	0.000000	.009000	.015000	.011000	.005000	.025000	.114000
ROW 25 ELECTRIC ENERGY	.005000	.013000	.004000	.004000	0.000000	.009000	.009000	.004000	.004000	.026000	.009000	.017000	.008000	.011000	.009000	.008000
ROW 26 OTHER UTILITIES	.003000	.004000	.003000	.002000	0.000000	.005000	.006000	0.000000	.003000	.008000	.011000	.003000	.012000	.016000	.006000	.025000
ROW 27 CONTRACT CONSTRUCTIONS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000	0.000000	.001000	.002000	0.000000	.001000	.004000	.001000
ROW 28 RENTALS AND FINANCE	.022000	.021000	.012000	.011000	.030000	.016000	.013000	.015000	.003000	.033000	.050000	.014000	.043000	.025000	.013000	.036000
ROW 29 HOUSEHOLD	.541100	.495600	.675800	.304100	.661400	.326600	.387100	.043100	.164400	.280100	.280000	.440200	.403700	.131500	.157700	.428700
ROW 30 LOCAL	.104600	.061500	.040400	.022100	.029200	.024600	.026900	.013100	.034500	.019800	.004500	.012300	.009500	.012000	.004200	.017000

TABLE C-13. - SAN JUAN 1980 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ROW 1 RANGE LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001300	0.000000
ROW 2 DAIRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000200	0.000000
ROW 3 FIELD CROPS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000100	0.000000
ROW 4 FRUIT	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000200	0.000000
ROW 5 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 6 ALL OTHER AGRICULTURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 7 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 OIL AND GAS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000100	0.001600
ROW 11 FOOD AND KINDRED	0.000000	0.000000	0.077000	0.000000	0.000000	0.025000	0.003000	0.001000	0.000000	0.000000	0.000000	0.001000	0.034100	0.001400
ROW 12 LUMBER AND WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001700	0.000300
ROW 13 PRINTING PUBLISHING	0.024000	0.044000	0.007000	0.019000	0.001000	0.008000	0.004000	0.002000	0.003000	0.003000	0.001000	0.006000	0.002700	0.001300
ROW 14 STONE CLAY GLASS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001800	0.003000
ROW 15 ALL OTHER MANUFACTURING	0.004000	0.004000	0.008000	0.004000	0.007000	0.001000	0.003000	0.026000	0.004000	0.002000	0.011000	0.004000	0.019000	0.013700
ROW 16 WHOLESALE TRADE	0.001000	0.002000	0.027000	0.014000	0.017000	0.002000	0.013000	0.017000	0.003000	0.001000	0.008000	0.002000	0.020300	0.007500
ROW 17 SERVICE STATIONS	0.000000	0.001000	0.001000	0.009000	0.004000	0.001000	0.001000	0.015000	0.000000	0.001000	0.001000	0.001000	0.006900	0.000700
ROW 18 ALL OTHER RETAIL	0.003000	0.004000	0.017000	0.008000	0.002000	0.006000	0.004000	0.003000	0.003000	0.003000	0.010000	0.003000	0.154700	0.011100
ROW 19 EATING DRINKING PLACES	0.000000	0.001000	0.000000	0.000000	0.002000	0.001000	0.001000	0.002000	0.000000	0.001000	0.000000	0.003000	0.021100	0.000700
ROW 20 AGRICULTURE SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 21 OIL FIELD SERVICES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 22 LODGING	0.000000	0.001000	0.000000	0.000000	0.002000	0.002000	0.001000	0.001000	0.000000	0.000000	0.000000	0.001000	0.003900	0.000100
ROW 23 ALL OTHER SERVICES	0.004000	0.036000	0.021000	0.014000	0.020000	0.051000	0.023000	0.020000	0.016000	0.008000	0.035000	0.027000	0.039700	0.027500
ROW 24 TRANSPORTATION	0.020000	0.073000	0.011000	0.000000	0.045000	0.001000	0.022000	0.096000	0.008000	0.008000	0.034000	0.000000	0.033200	0.020200
ROW 25 ELECTRIC ENERGY	0.033000	0.017000	0.015000	0.034000	0.005000	0.024000	0.011000	0.002000	0.134000	0.004000	0.002000	0.007000	0.031600	0.030300
ROW 26 OTHER UTILITIES	0.071000	0.020000	0.020000	0.008000	0.004000	0.053000	0.013000	0.013000	0.008000	0.010000	0.005000	0.014000	0.036500	0.013400
ROW 27 CONTRACT CONSTRUCTIONS	0.002000	0.005000	0.001000	0.000000	0.041000	0.016000	0.000000	0.001000	0.000000	0.003000	0.008000	0.004000	0.005500	0.001100
ROW 28 RENTALS AND FINANCE	0.069000	0.060000	0.065000	0.018000	0.013000	0.034000	0.049000	0.025000	0.108000	0.017000	0.024000	0.059000	0.065800	0.074400
ROW 29 HOUSEHOLD	0.546000	0.575600	0.314300	0.306800	0.233200	0.266700	0.502300	0.304100	0.198300	0.297100	0.198200	0.607500	0.032500	0.422700
ROW 30 LOCAL	0.018300	0.015600	0.014500	0.032900	0.004000	0.035800	0.008700	0.018900	0.022900	0.031000	0.001900	0.013900	0.044600	0.030800

TABLE C-14. - SAN JUAN 1980 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 RANGE LIVESTOCK	1.054024	.090042	.003748	.002561	.003503	.069512	.002393	.000407	.001436	.002074	.050913	.003450	.002796	.001006	.001152	.002644
ROW 2 DAIRY	.008201	1.012646	.008052	.005583	.007627	.040865	.005228	.001087	.003144	.004528	.190098	.007536	.005086	.002200	.002516	.005804
ROW 3 FIELD CROPS	.001634	.001525	1.001628	.001118	.001528	.023092	.001047	.000217	.000629	.000907	.036158	.001510	.001003	.000441	.000504	.001167
ROW 4 FRUIT	.000508	.004510	.000520	1.000361	.000494	.000670	.000338	.000064	.000203	.000293	.007200	.000488	.000324	.000142	.000162	.000374
ROW 5 FORESTRY	.001347	.001256	.001205	.000085	1.001105	.000875	.002588	.000244	.000478	.072054	.000877	.298110	.000713	.002612	.004204	.000864
ROW 6 ALL OTHER AGRICULTURE	.001754	.001692	.002793	.001247	.001706	1.001911	.001165	.000240	.000699	.001010	.024667	.001984	.001118	.000490	.000561	.001297
ROW 7 COAL	.001214	.001406	.001180	.001173	.001014	.000991	1.000966	.070244	.000529	.001146	.001051	.001355	.000831	.000565	.000570	.000944
ROW 8 OIL AND GAS	.021438	.022714	.022267	.017723	.019820	.017742	.016722	1.017747	.011255	.015992	.019631	.021129	.017226	.012222	.132514	.023674
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.117523	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	.002694	.002546	.002423	.001953	.002126	.001912	.001825	.000524	.001344	1.099316	.001813	.002185	.001550	.035322	.058714	.001871
ROW 11 FOOD AND KINDRED	.043862	.040647	.042762	.029761	.040656	.058031	.027872	.095774	.018764	.024144	1.045793	.040175	.026688	.011731	.013413	.030947
ROW 12 LUMBER AND WOOD	.003945	.003673	.003529	.002553	.003256	.002528	.008313	.070674	.001316	.002014	.002557	1.003260	.002060	.001655	.001313	.002514
ROW 13 PRINTING PUBLISHING	.010813	.016553	.018058	.021510	.014143	.014289	.016896	.092204	.007430	.008578	.019856	.014952	1.016508	.005611	.005912	.012964
ROW 14 STONE CLAY GLASS	.005256	.004794	.004483	.003275	.004101	.003244	.002945	.000894	.001650	.002563	.003239	.004090	.002565	1.004379	.001672	.003174
ROW 15 ALL OTHER MANUFACTURING	.024643	.025023	.025358	.021383	.021969	.020777	.020657	.095304	.017469	.018530	.019451	.023109	.017884	.015430	1.022035	.020841
ROW 16 WHOLESALE TRADE	.034831	.035294	.038638	.030252	.034747	.033909	.026033	.006644	.028835	.019517	.025727	.034097	.021599	.015685	.012366	1.025479
ROW 17 SERVICE STATIONS	.017495	.018371	.019548	.016425	.021853	.022666	.013924	.092594	.006534	.010044	.011169	.014567	.008704	.004172	.005085	.010404
ROW 18 ALL OTHER RETAIL	.184444	.184614	.212022	.137790	.182808	.178495	.144564	.026644	.074349	.106285	.139742	.179889	.120577	.057526	.061014	.134274
ROW 19 EATING DRINKING PLACES	.024646	.024236	.025473	.017764	.024252	.017677	.016607	.004494	.013218	.015511	.014504	.023960	.014001	.007108	.008243	.014621
ROW 20 AGRICULTURE SERVICES	.022664	.037390	.010614	.456421	.000576	.009356	.000394	.000041	.000237	.000342	.011135	.000569	.000378	.000166	.000190	.000477
ROW 21 OIL FIELD SERVICES	.000536	.000554	.000557	.000443	.000495	.000444	.000418	.025444	.000281	.000400	.000491	.000528	.000431	.000306	.003313	.000591
ROW 22 LUNGING	.004727	.004916	.005096	.003563	.004833	.003579	.003379	.000744	.002143	.002888	.003730	.004404	.003215	.001444	.001644	.004804
ROW 23 ALL OTHER SERVICES	.071730	.112420	.081437	.068385	.067896	.057108	.109731	.014114	.033490	.051282	.076722	.094013	.057915	.039784	.035698	.072114
ROW 24 TRANSPORTATION	.101647	.195864	.101142	.070287	.092795	.097575	.067403	.017384	.203710	.055509	.097243	.108930	.073125	.034499	.059777	.196494
ROW 25 ELECTRIC ENERGY	.002785	.072733	.062000	.062963	.053439	.052933	.048667	.012984	.028320	.065236	.055573	.072144	.044230	.030123	.030698	.040144
ROW 26 OTHER UTILITIES	.057857	.161641	.060690	.046938	.054427	.047754	.044762	.008277	.028479	.041722	.054679	.056803	.048112	.033159	.025225	.008144
ROW 27 CONTRACT CONSTRUCTIONS	.051981	.044705	.038179	.028934	.033848	.028849	.025391	.010148	.013550	.022157	.028124	.034825	.020417	.012948	.017226	.027114
ROW 28 RENTALS AND FINANCE	.154209	.154072	.141248	.113869	.150624	.115475	.102305	.035234	.058322	.116105	.154335	.144022	.125086	.066494	.060371	.133441
ROW 29 HOUSEHOLD	1.002552	1.079060	1.153656	.801519	1.098439	.789829	.747068	.152241	.447226	.447727	.825601	1.083012	.718913	.313733	.359526	.874714
ROW 30 LOCAL	.173513	.140964	.110370	.086072	.094658	.084946	.073489	.023364	.036192	.064277	.074772	.086263	.053430	.033529	.029980	.070224

TABLE C-14. - SAN JUAN 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMN	17	18	19	20	21	22	23	24	25	26	27	28	29	30
ROW 1 RANGE LIVESTOCK	.003392	.003533	.000630	.001918	.001553	.003194	.003626	.002124	.001813	.001845	.002249	.003436	.004859	.003154
ROW 2 DAIRY	.007406	.007721	.019263	.004185	.003408	.008866	.006843	.004740	.003969	.004031	.004920	.007589	.018567	.007684
ROW 3 FIELD CROPS	.001483	.001546	.003767	.000838	.000682	.001747	.001365	.000947	.000795	.000807	.000985	.001518	.002117	.001400
ROW 4 FRUIT	.000478	.000498	.000892	.000271	.000219	.000451	.000427	.000300	.000256	.000260	.000317	.000405	.000685	.000445
ROW 5 FORESTRY	.001108	.001190	.000786	.000582	.001259	.001009	.000873	.000704	.000680	.000722	.019325	.001102	.001368	.004276
ROW 6 ALL OTHER AGRICULTURE	.001651	.001720	.002927	.000934	.000756	.001552	.001473	.001014	.000883	.000898	.001095	.001873	.002366	.001535
ROW 7 COAL	.001695	.001400	.001832	.001276	.000579	.001157	.002064	.000694	.020222	.000672	.000826	.001131	.001324	.002137
ROW 8 OIL AND GAS	.004443	.027331	.021201	.015140	.017784	.028087	.020707	.021071	.043437	.300953	.019672	.023470	.025780	.026186
ROW 9 URANIUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 10 ALL OTHER MINING	.002235	.002406	.001868	.001456	.002250	.001733	.001748	.002907	.001446	.001416	.023992	.002133	.002398	.008190
ROW 11 FOOD AND KINDRED	.039494	.041166	.105092	.022310	.018178	.048617	.036584	.025311	.021163	.021495	.024233	.040999	.056323	.037392
ROW 12 LUMBER AND WOOD	.003242	.003491	.002237	.001978	.003747	.003018	.002555	.002041	.001975	.002122	.059816	.003242	.004082	.012604
ROW 13 PRINTING PUBLISHING	.038311	.058840	.018156	.027476	.007607	.017020	.015761	.011104	.011702	.010552	.011979	.019595	.018235	.015072
ROW 14 STONE CLAY GLASS	.004075	.004375	.002825	.002555	.004921	.003974	.003163	.002611	.002396	.002766	.000770	.004058	.004987	.019417
ROW 15 ALL OTHER MANUFACTURING	.023920	.025741	.022043	.015280	.017678	.013225	.019311	.040899	.015809	.013418	.031177	.022376	.025019	.035104
ROW 16 WHOLESALE TRADE	.029387	.032063	.046587	.029894	.031043	.019282	.036542	.035827	.018884	.016907	.032119	.029163	.037760	.035515
ROW 17 SERVICE STATIONS	1.010244	.012320	.008212	.014564	.009294	.006954	.009551	.022579	.005605	.006716	.009216	.010962	.013478	.010375
ROW 18 ALL OTHER RETAIL	.172541	1.180362	.133298	.104254	.080008	.105926	.147468	.106549	.094681	.095790	.136336	.171423	.241819	.169252
ROW 19 EATING DRINKING PLACES	.023752	.025680	1.016270	.013349	.012816	.014886	.021047	.016581	.012931	.014098	.015806	.026461	.033463	.022329
ROW 20 AGRICULTURE SERVICES	.000559	.000582	.001265	1.000316	.000256	.000595	.000507	.000347	.000299	.000304	.000371	.000569	.000799	.000523
ROW 21 OIL FIELD SERVICES	.001037	.000683	.000530	.000379	1.000445	.000702	.000518	.000527	.001086	.007524	.000492	.000587	.000645	.000655
ROW 22 LODGING	.004791	.006007	.003322	.002889	.004224	1.004819	.005045	.004004	.002645	.002579	.003259	.005702	.006624	.004496
ROW 23 ALL OTHER SERVICES	.116698	.107313	.070897	.053587	.053849	.094358	1.079447	.064221	.058841	.045806	.100540	.092364	.088075	.100053
ROW 24 TRANSPORTATION	.122018	.174992	.080560	.054323	.095541	.058012	.101540	1.164816	.059453	.059552	.119482	.088912	.124381	.116256
ROW 25 ELECTRIC ENERGY	.090799	.074053	.055051	.070231	.030057	.060682	.056423	.035745	1.184543	.035155	.041484	.059249	.070658	.094071
ROW 26 OTHER UTILITIES	.125704	.076874	.059186	.039884	.029954	.086388	.058423	.048634	.039593	1.039185	.045974	.066490	.072264	.065128
ROW 27 CONTRACT CONSTRUCTIONS	.035105	.039315	.024582	.023224	.072858	.048471	.024841	.023284	.021862	.027955	1.465103	.035391	.036327	.265652
ROW 28 RENTALS AND FINANCE	.197312	.190623	.158511	.093455	.071762	.115471	.151984	.104131	.197758	.088705	.123564	1.177982	.157651	.200475
ROW 29 HOUSEHOLD	1.059582	1.102448	.722567	.600024	.481689	.617249	.900006	.645000	.584498	.575553	.701248	1.058858	1.526032	.962848
ROW 30 LOCAL	.086491	.084937	.062769	.071178	.034938	.077869	.063915	.061302	.064039	.070708	.049978	.077369	.087763	1.093417

TABLE C-15

THE GREEN RIVER SUB-BASIN DETAILED INDUSTRY CLASSIFICATION

<u>Industry</u>	<u>Standard Industry Classification</u> ^{a/}
1. Agriculture	01
2. Forestry	08
3. Oil and Gas	13 except 138
4. Coal	11, 12
5. Uranium and Non-Fuels	10, 14
6. Food and Kindred Products	20
7. Lumber and Wood Products	24
8. Printing and Publishing	27
9. Stone, Clay and Glass	32
10. Chemicals, Petroleum, Coal and Other Manufacturing	28, 29, 31, 35, 37, 39 ^{a/}
11. Wholesale Trade	50
12. Service Stations	554
13. Eating and Drinking Places	581
14. Other Retail	Parts 52-59 except 554, 581
15. Oil Field Services	138
16. Lodging	70
17. Other Services (Except Professional)	72, 73, 75-79, 483, 80-86 except 801-804
18. Transportation	40-42, 440, 45-47
19. Electric Energy	491
20. Other Utilities	48-49 except 491 and 483
21. Contract Construction	151, 161, 162, 17
22. Rentals and Finance	60-67
23. Households	80, 81, 88

^{a/} SIC 22, 23, 25, 26, 30, 33, 34, 36 and 19 might apply in 1980.
In 1963 there were no firms in these classifications.

Source: Standard Industrial Classification Manual, 1957,
Bureau of the Budget, Washington D.C.

TABLE C-16. - GREEN RIVER 1963 GROSS FLOWS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ROW 1 AGRICULTURE	8321	0	0	0	0	4712	6	0	0	0	0	0	0	0	0	120
ROW 2 FORESTRY	0	0	0	0	0	0	1036	0	0	0	0	0	0	0	0	0
ROW 3 OIL AND GAS	0	0	0	6	219	0	0	0	0	1496	84	20	0	45	0	0
ROW 4 COAL	0	0	0	260	50	29	1	0	2	2	0	1	0	10	0	0
ROW 4 URANIUM NON FUEL	0	0	0	0	4412	0	0	0	43	0	0	0	0	0	0	0
ROW 6 FOOD AND KINDRED	989	0	0	22	0	64	0	0	5	2	0	0	1056	40	0	84
ROW 7 LUMBER AND WOOD	31	0	0	72	10	2	0	0	0	0	0	0	0	40	0	0
ROW 8 PRINTING PUBLISHING	0	0	33	27	23	13	1	0	7	5	7	84	20	341	0	37
ROW 9 STONE CLAY GLASS	3	0	160	39	0	0	2	0	43	0	0	55	15	0	0	0
ROW 10 CHEMICAL PETROLEUM COAL	2	42	21	312	29	5	0	0	0	10	0	0	0	0	55	0
ROW 11 WHOLESALE TRADE	379	2	56	89	51	19	33	0	2	1	14	4	105	160	12	0
ROW 12 SERVICE STATIONS	118	21	27	28	8	21	11	1	0	0	0	10	10	203	0	0
ROW 13 EATING AND DRINKING	0	0	56	32	0	0	0	0	0	0	0	0	0	68	24	0
ROW 14 OTHER RETAIL	554	7	51	56	0	125	35	1	2	3	99	38	920	554	32	0
ROW 14 OIL FIELD SERVICE	0	0	1650	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 1A LODGING	0	0	37	10	0	0	0	0	0	0	0	0	0	0	27	0
ROW 17 OTHER SERVICES	1773	0	33	21	119	88	93	34	52	14	176	7	316	1205	23	491
ROW 18 TRANSPORTATION	1214	0	1001	1039	396	333	189	3	75	146	1024	102	52	2604	274	41
ROW 19 ELECTRIC ENERGY	667	0	724	1224	379	52	74	0	7	33	52	43	130	400	69	170
ROW 20 OTHER UTILITIES	195	0	37	130	76	35	10	3	6	5	264	206	107	857	82	544
ROW 21 CONTRACT CONSTRUCTION	0	0	266	240	59	8	0	0	0	0	67	17	35	52	91	20
ROW 22 RENTAL FINANCE	996	22	4833	993	558	108	55	22	56	72	341	622	311	1917	68	690
ROW 23 HOUSEHOLD	22583	563	4487	21754	5969	1298	680	443	669	801	4048	1816	2242	13808	1703	1307
ROW 24 LOCAL	2882	26	1756	899	226	30	42	14	24	13	150	81	164	554	137	120
ROW 24 STATE AND FEDERAL	1769	286	15563	2133	1211	231	144	47	89	210	1464	441	108	2744	730	244
ROW 26 INVENTORY CHANGE	0	0	0	3706	0	0	93	0	0	155	241	0	11	8364	0	0
ROW 27 DEPRECIATION	4818	28	35839	3979	1910	193	72	30	122	169	230	127	71	370	1187	1104
ROW 28 IMPORTS INSIDE BASIN	21	0	1449	294	95	21	36	0	13	179	39	13	299	2362	1305	0
ROW 29 IMPORTS OUTSIDE BASINS	2996	48	58181	10692	8239	1167	100	240	545	590	2529	706	4888	6284	30076	4677
ROW 30 TOTAL GROSS OUTLAYS	50232	1053	126261	47860	24047	8563	2671	907	1762	2806	11042	4401	10885	42998	35910	9988

TABLE C-16. - GREEN RIVER 1963 GROSS FLOWS (Cont.)

COLUMN	17	18	19	20	21	22	23	Households 24	Local Gov't 25	State & Fed. Gov't 26	Inventory Accum. 27	Gross Priv. Invest. 28	Exports to Cale R. Sub-Basin 29	Exports to Rest of World 30	Total Output 31
ROW 1 AGRICULTURE	0	0	0	0	0	0	226	0	3601	0	0	0	1202	31955	50232
ROW 2 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1053
ROW 3 OIL AND GAS	15	36	920	977	173	0	2397	209	102	0	0	0	0	119610	126261
ROW 4 COAL	0	0	3392	33	0	0	5258	0	0	3919	0	0	7430	27467	47860
ROW 5 URANIUM NON FUEL	0	0	0	0	744	0	0	733	6656	0	0	0	27	11433	24047
ROW 6 FOOD AND KINDRED	0	0	0	0	0	0	1690	12	21	0	0	0	190	4460	8563
ROW 7 LUMBER AND WOOD	0	0	2	4	277	0	67	5	0	98	53	261	1742	2671	907
ROW 8 PRINTING PUBLISHING	49	81	20	8	0	4	44	39	0	0	0	502	28	10	1762
ROW 9 STONE CLAY GLASS	0	0	1	0	618	0	202	4	0	0	113	78	125	1493	3806
ROW 10 CHEMICAL PETROLUEN COAL	0	0	0	0	95	0	1427	0	0	249	513	58	1347	11042	4401
ROW 11 WHOLESALE TRADE	792	906	6	23	2239	92	3670	141	70	0	157	47	1337	10885	42990
ROW 12 SERVICE STATIONS	33	568	4	21	324	40	1105	234	49	0	16	27	158	5301	35910
ROW 13 EATING AND DRINKING	0	373	61	0	0	0	4763	0	0	2732	1897	150	10549	9908	10489
ROW 14 OTHER RETAIL	176	138	39	225	123	373	23638	297	76	0	0	34260	0	0	28124
ROW 15 OIL FIELD SERVICE	0	0	0	0	0	0	566	0	18	0	111	145	8874	9908	10489
ROW 16 LODGING	2	114	3	0	0	0	3995	51	26	0	82	20	263	20171	9807
ROW 17 OTHER SERVICES	855	258	10	49	181	316	2536	109	133	0	2823	0	8665	52802	28598
ROW 18 TRANSPORTATION	87	3463	644	357	794	20	1893	530	423	477	27	0	8859	168385	67925
ROW 19 ELECTRIC ENERGY	198	610	548	57	282	216	3592	506	610	0	99	0	458	13093	62509
ROW 20 OTHER UTILITIES	626	394	93	437	155	277	2972	242	24562	0	5455	0	13405	1932	168385
ROW 21 CONTRACT CONSTRUCTION	32	8	78	7	5108	70	9944	82	106	0	0	0	3439	20598	24000
ROW 22 RENTAL FINANCE	180	314	164	376	734	1604	5522	11981	11958	0	1896	742	1932	168385	24000
ROW 23 HOUSEHOLD	2156	13463	1412	803	10645	21615	5807	1011	7177	0	0	90	823	67925	13093
ROW 24 LOCAL	358	372	871	228	314	900	27099	198	4851	0	0	0	0	0	62509
ROW 25 STATE AND FEDERAL	1566	1224	711	91	955	418	0	0	0	0	0	0	0	0	12970
ROW 26 INVENTORY CHANGE	0	0	524	0	0	0	0	0	0	0	0	0	0	0	13093
ROW 27 DEPRECIATION	822	168	3086	925	610	930	4718	1042	0	0	0	0	0	0	62509
ROW 28 IMPORTS INSIDE BASIN	35	194	145	107	1377	122	1418	123	326	884	1776	41	186	12970	13093
ROW 29 IMPORTS OUTSIDE BASINS	2508	5439	5428	5059	27053	1602	53927	7264	13706	16562	7553	4306	19444	301848	1101916
ROW 30 TOTAL GROSS OUTLAYS	10489	28124	18171	9807	52802	28598	168385	24888	74469	25050	57389	15226	286211	1101916	

TABLE C-17. - GREEN RIVER 1963 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12
ROW 1 AGRICULTURE	.165653	0.000000	0.000000	0.000000	0.000000	.550224	.002176	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 2 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.401828	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 OIL AND GAS	0.000000	0.000000	0.000000	.000141	.009109	0.000000	0.000000	0.000000	0.000000	.398642	.007736	.004513
ROW 4 COAL	0.000000	0.000000	0.000000	.005284	.002061	.003393	.000435	0.000000	.001192	.000522	0.000000	.000251
ROW 5 URANIUM NON FUEL	0.000000	0.000000	0.000000	0.000000	.183456	0.000000	0.000000	0.000000	.024193	0.000000	0.000000	0.000000
ROW 6 FOOD AND KINDRED	.010102	0.000000	0.000000	.000494	0.000000	.007512	0.000000	0.000000	.002880	.000522	0.000000	0.000000
ROW 7 LUMBER AND WOOD	.000612	0.000000	0.000000	.001224	.000412	.000242	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 PRINTING PUBLISHING	0.000000	0.000000	.000261	.000612	.000948	.001575	.000435	.004807	.004032	.001306	.000619	.019957
ROW 9 STONE CLAY GLASS	.000061	0.000000	.001265	.000894	0.000000	0.000000	.000870	0.000000	.024193	0.000000	0.000000	.012537
ROW 10 CHEMICAL PETROLEUM COAL	.000041	.039403	.000169	.007061	.001195	.000606	0.000000	0.000000	0.000000	.002612	0.000000	0.000000
ROW 11 WHOLESALE TRADE	.007551	.002129	.000447	.002024	.002102	.002181	.012625	.002404	.001152	.000261	.001341	.001003
ROW 12 SERVICE STATIONS	.002347	.020234	.000211	.000936	.000330	.002423	.004353	.001201	0.000000	0.000000	0.000000	.004012
ROW 13 EATING AND DRINKING	0.000000	0.000000	.000447	.000730	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 14 OTHER RETAIL	.011020	.006389	.000405	.001271	.000371	.014540	.013496	.001201	.001152	.000783	.009180	.000526
ROW 15 OIL FIELD SERVICE	0.000000	0.000000	.012068	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 LODGING	0.000000	0.000000	.000295	.000235	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 17 OTHER SERVICES	.035306	0.000000	.000261	.000471	.004946	.010299	.020461	.036058	.029378	.003918	.016297	.001504
ROW 18 TRANSPORTATION	.024163	0.000000	.007925	.023536	.016407	.038895	.073139	.003604	.042626	.039968	.094791	.023069
ROW 19 ELECTRIC ENERGY	.013286	0.000000	.005733	.027725	.015745	.006058	.028733	.009614	.004032	.009143	.004848	.009779
ROW 20 OTHER UTILITIES	.003878	0.000000	.000295	.002942	.003174	.004120	.003918	.003605	.003456	.001306	.024446	.046091
ROW 21 CONTRACT CONSTRUCTION	0.000000	0.000000	.002108	.005437	.002473	.000969	0.000000	0.000000	0.000000	0.000000	.000189	.003761
ROW 22 RENTAL FINANCE	.019837	.021299	.030276	.022501	.023205	.012601	.021332	.024038	.031682	.019854	.031563	.141424
ROW 23 HOUSEHOLD	.449571	.534610	.035536	.492680	.240207	.151581	.263822	.489182	.379608	.219436	.374729	.412738
ROW 24 LOCAL	.057300	.024600	.013900	.015000	.009300	.004400	.016200	.015400	.013600	.003500	.013800	.010200

TABLE C-17. - GREEN RIVER 1963 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	13	14	15	16	17	18	19	20	21	22	23	24
ROW 1 AGRICULTURE	0.000000	0.000000	0.000000	.013069	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001343	0.000000
ROW 2 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 OIL AND GAS	0.000000	.001301	0.000000	0.000000	.001457	.001290	.052575	.099653	.003275	0.000000	.013703	.011300
ROW 4 COAL	0.000000	.000476	0.000000	0.000000	0.000000	0.000000	.192189	.003359	0.000000	0.000000	.031229	0.000000
ROW 5 URANIUM NON FUEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.014088	0.000000	0.000000	.029400
ROW 6 FOOD AND KINDRED	.097105	.001142	0.000000	.008554	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.010039	.000400
ROW 7 LUMBER AND WOOD	0.000000	.001396	0.000000	0.000000	0.000000	0.000000	.000126	.000448	.005248	0.000000	.000396	.000200
ROW 8 PRINTING PUBLISHING	.001848	.009835	0.000000	.003208	.004685	.002876	.001132	.000784	0.000000	.000155	.000264	.001500
ROW 9 STONE CLAY GLASS	.001334	0.000000	0.000000	0.000000	0.000000	0.000000	.000063	0.000000	.011706	0.000000	.001203	.000100
ROW 10 CHEMICAL PETROLEUM COAL	0.000000	0.000000	.001525	0.000000	0.000000	0.000000	0.000000	0.000000	.001805	0.000000	.000473	0.000000
ROW 11 WHOLESALE TRADE	.009649	.004632	.000330	.000832	.075474	.032222	.000314	.002351	.042412	.003210	.021700	.005600
ROW 12 SERVICE STATIONS	.001642	.005869	.000229	0.000000	.003123	.020204	.000251	.002127	.006141	.001392	.006565	.009400
ROW 13 EATING AND DRINKING	0.000000	.001967	.000814	0.000000	0.000000	.013272	.003459	0.000000	0.000000	0.000000	.020292	0.000000
ROW 14 OTHER RETAIL	.005301	.015990	.000890	.009504	.016760	.004903	.002201	.022954	.002326	.013035	.140405	.011900
ROW 15 OIL FIELD SERVICE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 LODGING	0.000000	0.000000	.000763	0.000000	.000208	.004055	.000189	0.000000	0.000000	0.000000	.003359	0.000000
ROW 17 OTHER SERVICES	.029049	.034804	.000636	.047523	.081511	.009180	.000566	.005039	.003424	.011062	.023729	.002000
ROW 18 TRANSPORTATION	.004824	.075193	.007627	.004148	.008328	.123138	.036476	.036390	.015037	.000696	.015064	.004300
ROW 19 ELECTRIC ENERGY	.012728	.011549	.001932	.018049	.018842	.021678	.031067	.005822	.005341	.007543	.011247	.021200
ROW 20 OTHER UTILITIES	.009854	.024747	.002288	.055008	.059650	.014010	.005283	.044564	.002940	.009670	.021300	.020400
ROW 21 CONTRACT CONSTRUCTION	.003182	.001491	.002542	.002970	.003019	.000295	.004402	.000672	.096734	.002437	.017652	.009700
ROW 22 RENTAL FINANCE	.028639	.055363	.001907	.066413	.017177	.011171	.009308	.040421	.013902	.054004	.059068	.003200
ROW 23 HOUSEHOLD	.206220	.398680	.047413	.141024	.205496	.478690	.079995	.081850	.201600	.755800	.032800	.481300
ROW 24 LOCAL	.015000	.012800	.003800	.012900	.034100	.013200	.049300	.023200	.005900	.031400	.034400	.040600

TABLE C-18. - GREEN RIVER 1963 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12
ROW 1 AGRICULTURE	1.222611	.008492	.001264	.008330	.005175	.600855	.011431	.007711	.600845	.004742	.007065	.008519
ROW 2 FORESTRY	.000617	1.000271	.000047	.000924	.000379	.000550	.402121	.000246	.600225	.000143	.000246	.000294
ROW 3 OIL AND GAS	.023808	.034790	1.003439	.022468	.024858	.021294	.028644	.018327	.016567	.410389	.026718	.029217
ROW 4 COAL	.035828	.028834	.005426	1.038402	.024020	.035010	.036252	.028179	.025641	.017750	.025236	.031507
ROW 5 URANIUM NON FUEL	.004726	.002718	.000928	.002454	1.226326	.003514	.003017	.002262	.032429	.001366	.002239	.003180
ROW 6 FOOD AND KINDRED	.034231	.010842	.001618	.010719	.006607	1.030453	.011286	.009841	.011772	.006145	.009033	.010885
ROW 7 LUMBER AND WOOD	.001535	.000674	.000117	.002301	.000943	.001370	1.000729	.000613	.000560	.000355	.000613	.000733
ROW 8 PRINTING PUBLISHING	.003035	.002598	.000660	.002732	.002601	.004449	.003494	1.006977	.006226	.002718	.002937	.021682
ROW 9 STONE CLAY GLASS	.001709	.001680	.001540	.002330	.000929	.001509	.002539	.001291	1.025939	.001265	.001280	.014300
ROW 10 CHEMICAL PETROLEUM COAL	.007987	.046606	.001217	.013817	.005839	.007588	.023190	.006468	.005760	1.006339	.005847	.007112
ROW 11 WHOLESALE TRADE	.040350	.025548	.004495	.025025	.018270	.035437	.042307	.026721	.024277	.014489	1.025965	.026455
ROW 12 SERVICE STATIONS	.013117	.028232	.001738	.008562	.005743	.013597	.022654	.008539	.007494	.005168	.008906	1.012893
ROW 13 EATING AND DRINKING	.026744	.023582	.003974	.023168	.014694	.023824	.025432	.021508	.019625	.012906	.020828	.023955
ROW 14 OTHER RETAIL	.150288	.127676	.018525	.114501	.074563	.141732	.141917	.112094	.099758	.063539	.110495	.132446
ROW 15 OIL FIELD SERVICE	.000311	.000455	.013113	.000294	.000325	.000278	.000374	.000239	.000216	.005363	.000349	.000382
ROW 16 LODGING	.003346	.002873	.000755	.003028	.001846	.003062	.003305	.002692	.002516	.001789	.002805	.002984
ROW 17 OTHER SERVICES	.080786	.029727	.005226	.028389	.024998	.067791	.054607	.066271	.057640	.020370	.043835	.034631
ROW 18 TRANSPORTATION	.075270	.035445	.014604	.059553	.044698	.100662	.123326	.035214	.078186	.067114	.138205	.063804
ROW 19 ELECTRIC ENERGY	.038332	.017191	.009214	.045025	.031015	.035120	.050074	.025788	.028062	.021780	.021906	.029155
ROW 20 OTHER UTILITIES	.041260	.028832	.005298	.029532	.022032	.039217	.037243	.031599	.029228	.017116	.051791	.079448
ROW 21 CONTRACT CONSTRUCTION	.020546	.017766	.005189	.022956	.014313	.018894	.018682	.016214	.014484	.018137	.021589	.022320
ROW 22 RENTAL FINANCE	.102744	.092867	.050609	.086709	.071733	.096492	.105586	.086632	.089985	.072142	.091874	.220768
ROW 23 HOUSEHOLD	.893521	.804611	.114839	.750284	.488400	.779456	.823655	.731746	.646666	.410505	.659919	.802795
ROW 24 LOCAL	.120005	.065602	.022023	.055380	.038286	.087313	.072756	.053996	.049487	.032030	.050797	.065795

TABLE C-18. - GREEN RIVER 1963 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMN	13	14	15	16	17	18	19	20	21	22	23	24
ROW 1 AGRICULTURE	.070649	.000710	.000929	.025399	.004894	.009960	.004129	.002774	.004319	.011960	.014230	.000133
ROW 2 FORESTRY	.000257	.000027	.000034	.000144	.000194	.000293	.000325	.000297	.002477	.000393	.000441	.000374
ROW 3 OIL AND GAS	.014726	.022634	.002945	.015913	.021874	.024861	.065164	.111533	.015406	.020113	.030708	.032973
ROW 4 COAL	.021566	.029741	.003337	.016974	.021238	.035209	.213902	.014511	.015962	.042006	.047864	.031244
ROW 5 URANIUM NON FUEL	.002118	.002352	.000385	.001634	.002690	.002558	.003038	.001085	.020733	.003777	.002861	.039451
ROW 6 FOOD AND KINDRED	.105072	.011352	.001186	.013777	.006253	.012867	.005349	.003553	.005503	.015246	.018155	.010449
ROW 7 LUMBER AND WOOD	.000641	.002059	.000086	.000344	.000484	.000729	.000808	.000740	.006164	.000978	.001098	.000931
ROW 8 PRINTING PUBLISHING	.004578	.012631	.000274	.004694	.006892	.006179	.002571	.002077	.001446	.003335	.003362	.003907
ROW 9 STONE CLAY GLASS	.002338	.001417	.000184	.000687	.000937	.001803	.001063	.000656	.014097	.002027	.002325	.001606
ROW 10 CHEMICAL PETROLEUM COAL	.004481	.006513	.002249	.003144	.004094	.007456	.004595	.002324	.005690	.010023	.011929	.000444
ROW 11 WHOLESALE TRADE	.029259	.032270	.003181	.016341	.097343	.062573	.013499	.012540	.060200	.037293	.038455	.020401
ROW 12 SERVICE STATIONS	.008191	.015238	.001252	.004337	.009030	.031543	.005453	.006194	.011405	.012646	.012576	.017264
ROW 13 EATING AND DRINKING	1.015066	.024685	.003301	.010527	.013888	.039932	.014850	.000245	.012100	.033267	.039538	.021901
ROW 14 OTHER RETAIL	.165406	1.129237	.013268	.066379	.090846	.134615	.057683	.064345	.064368	.184598	.202085	.124810
ROW 15 OIL FIELD SERVICE	.000192	.000296	1.000038	.000204	.000286	.000325	.000852	.001457	.000202	.000367	.000401	.000431
ROW 16 LODGING	.001870	.002984	.001087	1.001313	.001970	.007651	.001730	.001139	.001546	.004045	.004798	.002441
ROW 17 OTHER SERVICES	.057836	.067585	.003880	.067485	1.108891	.043953	.014933	.017321	.020864	.054172	.048261	.030220
ROW 18 TRANSPORTATION	.043176	.120789	.012502	.026011	.044267	1.181832	.065103	.058465	.043143	.048763	.093172	.039945
ROW 19 ELECTRIC ENERGY	.027924	.030765	.004013	.029008	.033363	.043953	1.047976	.014774	.016051	.031603	.025941	.038941
ROW 20 OTHER UTILITIES	.034272	.056502	.005532	.074878	.088146	.049070	.020890	1.050612	.019864	.050485	.044529	.048678
ROW 21 CONTRACT CONSTRUCTION	.015201	.018200	.004636	.011724	.014915	.019347	.014819	.007199	1.116425	.027732	.028961	.027616
ROW 22 RENTAL FINANCE	.081980	.124817	.009206	.105189	.066416	.089589	.048425	.073345	.054171	1.153527	.109025	.069504
ROW 23 HOUSEHOLD	.496573	.732429	.080522	.351025	.458834	.840960	.355630	.255535	.403454	1.134734	1.353589	.743763
ROW 24 LOCAL	.049610	.055435	.000321	.039201	.066782	.060292	.076400	.042818	.029283	.089936	.063666	1.001064

TABLE C-19. - GREEN RIVER 1980 GROSS FLOWS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12	13
ROW 1 AGRICULTURE	9599	0	0	0	0	5490	10	0	0	0	0	0	0
ROW 2 FORESTRY	0	0	0	0	0	0	1982	8	0	0	0	0	0
ROW 3 OIL AND GAS	0	0	1619	0	252	0	0	0	0	1140	158	46	0
ROW 4 COAL	0	0	0	328	0	0	5	0	0	4	3	0	0
ROW 5 URANIUM NON FUEL	0	0	0	0	4596	0	0	0	0	46	0	0	0
ROW 6 FOOD AND KINDRED	983	0	0	0	0	190	0	0	0	6	3	0	0
ROW 7 LUMBER AND WOOD	58	0	0	109	0	0	25	0	0	0	0	0	0
ROW 8 PRINTING PUBLISHING	0	0	0	55	23	21	0	0	7	0	3	20	154
ROW 9 STONE CLAY GLASS	0	0	180	55	0	0	5	0	0	54	0	0	100
ROW 10 CHEMICAL PETROLEUM COAL	116	83	360	657	91	11	0	133	0	0	14	0	0
ROW 11 WHOLESALE TRADE	463	4	0	109	46	21	64	9	2	0	0	20	8
ROW 12 SERVICE STATIONS	0	41	180	55	0	32	20	1	0	0	0	0	31
ROW 13 EATING AND DRINKING	0	0	180	55	0	0	0	0	0	0	0	0	0
ROW 14 OTHER RETAIL	636	14	0	0	0	158	64	1	2	3	20	69	0
ROW 15 OIL FIELD SERVICE	0	0	2699	0	0	0	0	0	0	0	0	0	0
ROW 16 LODGING	0	0	0	0	0	0	0	0	0	0	0	0	0
ROW 17 OTHER SERVICES	2139	4	0	0	114	158	104	55	58	11	316	15	0
ROW 18 TRANSPORTATION	1388	0	1439	1368	366	412	360	4	82	114	1874	185	0
ROW 19 ELECTRIC ENERGY	810	0	1259	1641	389	106	148	15	12	34	118	77	0
ROW 20 OTHER UTILITIES	231	0	0	164	69	84	20	6	6	3	473	385	0
ROW 21 CONTRACT CONSTRUCTION	0	0	0	274	46	11	0	0	0	0	118	31	0
ROW 22 RENTAL FINANCE	1214	48	7197	1368	594	158	108	37	61	63	631	1100	0
ROW 23 HOUSEHOLD	25995	1885	6394	27050	5675	1600	1306	710	728	613	7468	3172	0
ROW 24 LOCAL	4024	55	3055	1054	260	56	96	14	33	12	335	171	0
ROW 25 OTHER FINAL PAYMENTS	10164	691	155360	25172	10342	2049	816	473	816	898	8822	2146	0
ROW 26 TOTAL GROSS OUTLAY	57822	2022	179922	59514	22864	10557	5133	1474	1918	2914	20372	7689	0

TABLE C-19. - GREEN RIVER 1980 GROSS FLOWS (Cont.)

COLUMN	14	15	16	17	18	19	20	21	22	23 Households	24 Local Gov't	25 Final Demand	26 Total Output
ROW 1 AGRICULTURE	0	0	0	324	0	0	0	0	0	0	260	42140	57822
ROW 2 FORESTRY	0	0	0	0	0	0	0	0	0	0	0	40	2022
ROW 3 OIL AND GAS	0	55	0	0	17	35	1712	1700	143	0	3287	169272	179922
ROW 4 COAL	0	0	0	0	0	0	6529	67	0	0	6530	46040	59514
ROW 5 URANIUM NON FUEL	0	0	0	0	0	0	0	0	717	0	0	16660	22864
ROW 6 FOOD AND KINDRED	1987	165	0	224	0	0	0	0	0	0	2083	4899	10557
ROW 7 LUMBER AND WOOD	0	110	0	0	0	0	0	0	287	0	127	4406	5133
ROW 8 PRINTING PUBLISHING	41	550	0	74	86	104	32	17	0	51	66	87	1474
ROW 9 STONE CLAY GLASS	20	0	0	0	0	0	0	0	574	0	221	705	1918
ROW 10 CHEMICAL PETROLEUM COAL	0	0	43	0	0	0	0	0	96	0	1093	219	2914
ROW 11 WHOLESALE TRADE	203	275	0	24	1295	1105	0	33	2008	152	129	14093	20372
ROW 12 SERVICE STATIONS	41	330	0	0	52	691	32	33	287	51	1931	3389	7689
ROW 13 EATING AND DRINKING	0	110	21	0	0	449	95	0	0	0	8879	10503	20292
ROW 14 OTHER RETAIL	1723	880	21	250	294	173	63	383	96	659	40323	26904	73350
ROW 15 OIL FIELD SERVICE	0	0	0	0	0	0	0	0	0	0	0	18731	21430
ROW 16 LODGING	0	0	21	0	0	138	0	0	0	0	1426	23375	24961
ROW 17 OTHER SERVICES	608	1925	21	1194	1416	311	32	100	143	709	6576	1151	17267
ROW 18 TRANSPORTATION	101	4125	171	100	138	4248	1141	600	717	51	3113	12270	34529
ROW 19 ELECTRIC ENERGY	264	660	43	440	328	760	983	100	287	405	3416	19334	32796
ROW 20 OTHER UTILITIES	203	1430	43	1373	1036	484	158	750	143	507	1037	7013	16664
ROW 21 CONTRACT CONSTRUCTION	61	55	64	74	52	0	158	17	4733	101	2691	39061	47813
ROW 22 RENTAL FINANCE	588	3080	64	1679	345	414	349	700	813	2888	17616	9382	50665
ROW 23 HOUSEHOLD	4179	23555	1016	3510	3548	16529	2548	1364	9639	38280	11138	24029	247539
ROW 24 LOCAL	371	1146	98	390	713	554	1907	468	344	1933	10895	19440	50724
ROW 25 OTHER FINAL PAYMENTS	9902	34899	19804	15284	7947	8536	17057	10332	26786	4878	124694	201108	719251
ROW 26 TOTAL GROSS OUTLAY	20292	73350	21430	24961	17267	34529	32796	16664	47813	50665	247539	719251	1729482

TABLE C-20. - GREEN RIVER 1980 DIRECT INPUT COEFFICIENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12
ROW 1 AGRICULTURE	.166000	0.000000	0.000000	0.000000	0.000000	.528000	.002000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 2 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.402000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 OIL AND GAS	0.000000	0.000000	.009000	0.000000	.011000	0.000000	0.000000	0.000000	0.000000	.400000	.008000	.006000
ROW 4 COAL	0.000000	0.000000	0.000000	.006000	0.000000	0.000000	.001000	0.000000	.002000	.001000	0.000000	0.000000
ROW 5 UMANIUM NON FUEL	0.000000	0.000000	0.000000	0.000000	.201000	0.000000	0.000000	0.000000	.024000	0.000000	0.000000	0.000000
ROW 6 FOOD AND KINDRED	.017000	0.000000	0.000000	0.000000	0.000000	.018000	0.000000	0.000000	.003000	.001000	0.000000	0.000000
ROW 7 LUMBER AND WOOD	.001000	0.000000	0.000000	.002000	0.000000	0.000000	.005000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 8 PRINTING PUBLISHING	0.000000	0.000000	0.000000	.001000	.001000	.002000	0.000000	.005000	.004000	.001000	.001000	.020000
ROW 9 STONE CLAY GLASS	0.000000	0.000000	.001000	.001000	0.000000	0.000000	.001000	0.000000	.028000	0.000000	0.000000	.013000
ROW 10 CHEMICAL PETROLUEN COAL	.002000	.041000	.002000	.012000	.004000	.001000	0.000000	.000000	0.000000	.005000	0.000000	0.000000
ROW 11 WHOLESALE TRADE	.008000	.002000	0.000000	.002000	.002000	.002000	.013000	.002000	.001000	0.000000	.001000	.001000
ROW 12 SERVICE STATIONS	0.000000	.020000	.001000	.001000	0.000000	.003000	.000000	.001000	0.000000	0.000000	0.000000	.004000
ROW 13 EATING AND DRINKING	0.000000	0.000000	.001000	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 14 OTHER RETAIL	.011000	.007000	0.000000	0.000000	0.000000	.015000	.013000	.001000	.001000	.001000	.001000	.009000
ROW 15 OIL FIELD SERVICE	0.000000	0.000000	.015000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 LODGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 17 OTHER SERVICES	.037000	.002000	0.000000	0.000000	.005000	.015000	.021000	.037000	.030000	.004000	.016000	.002000
ROW 18 TRANSPORTATION	.024000	0.000000	.008000	.025000	.016000	.039000	.073000	.004000	.043000	.040000	.095000	.024000
ROW 19 ELECTRIC ENERGY	.014000	0.000000	.007000	.030000	.017000	.010000	.030000	.010000	.006000	.012000	.006000	.010000
ROW 20 OTHER UTILITIES	.004000	0.000000	0.000000	.003000	.003000	.008000	.004000	.004000	.003000	.001000	.024000	.050000
ROW 21 CONTRACT CONSTRUCTION	0.000000	0.000000	0.000000	.005000	.002000	.001000	0.000000	0.000000	0.000000	0.000000	.006000	.004000
ROW 22 RENTAL FINANCE	.021000	.023000	.040000	.025000	.026000	.015000	.022000	.025000	.032000	.022000	.032000	.143000
ROW 23 HOUSEHOLD	.449500	.536500	.035500	.492400	.248200	.151500	.263300	.487700	.379500	.219200	.381800	.412500
ROW 24 LOCAL	.069500	.027200	.016900	.019100	.011300	.005300	.019300	.012200	.017200	.004200	.017100	.022200

TABLE C-20. - GREEN RIVER 1980 DIRECT INPUT COEFFICIENTS (Cont.)

COLUMN	13	14	15	16	17	18	19	20	21	22	23	24
ROW 1 AGRICULTURE	0.000000	0.000000	0.000000	.013000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.001000	0.000000
ROW 2 FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 3 OIL AND GAS	0.000000	.001000	0.000000	0.000000	.001000	.001000	.054000	.102000	.003000	0.000000	.013200	.009600
ROW 4 COAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.206000	.004000	0.000000	0.000000	.020400	0.000000
ROW 5 URANIUM NON FUEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.015000	0.000000	0.000000	.016600
ROW 6 FOOD AND KINDRED	.008000	.003000	0.000000	.009000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.008400	.000300
ROW 7 LUMBER AND WOOD	0.000000	.002000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.006000	0.000000	.000500	.000200
ROW 8 PRINTING PUBLISHING	.002000	.010000	0.000000	.003000	.005000	.003000	.001000	.001000	0.000000	.001000	.000200	.001500
ROW 9 STONE CLAY GLASS	.001000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	.012000	0.000000	.000800	0.000000
ROW 10 CHEMICAL PETROLEUM COAL	0.000000	0.000000	.002000	0.000000	0.000000	0.000000	0.000000	0.000000	.002000	0.000000	.004000	0.000000
ROW 11 WHOLESALE TRADE	.010000	.005000	0.000000	.001000	.075000	.032000	0.000000	.002000	.042000	.003000	.000500	.006200
ROW 12 SERVICE STATIONS	.002000	.006000	0.000000	0.000000	.003000	.020000	.001000	.002000	.006000	.001000	.007800	.009700
ROW 13 EATING AND DRINKING	0.000000	.002000	.001000	0.000000	0.000000	.013000	.003000	0.000000	0.000000	0.000000	.035800	0.000000
ROW 14 OTHER RETAIL	.085000	.016000	.001000	.010000	.017000	.005000	.002000	.023000	.002000	.013000	.162800	.012100
ROW 15 OIL FIELD SERVICE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
ROW 16 LODGING	0.000000	0.000000	.001000	0.000000	0.000000	.004000	0.000000	0.000000	0.000000	0.000000	.005700	0.000000
ROW 17 OTHER SERVICES	.030000	.035000	.001000	.048000	.082000	.009000	.001000	.006000	.003000	.014000	.029500	.002000
ROW 18 TRANSPORTATION	.005000	.075000	.008000	.004000	.008000	.123000	.036000	.036000	.015000	.001000	.012500	.003100
ROW 19 ELECTRIC ENERGY	.013000	.012000	.002000	.018000	.019000	.022000	.031000	.006000	.006000	.008000	.013700	.022800
ROW 20 OTHER UTILITIES	.010000	.026000	.002000	.055000	.060000	.014000	.005000	.045000	.003000	.010000	.004000	.020600
ROW 21 CONTRACT CONSTRUCTION	.003000	.001000	.003000	.003000	.003000	0.000000	.005000	.001000	.099000	.002000	.010800	.005200
ROW 22 RENTAL FINANCE	.029000	.056000	.003000	.067000	.020000	.012000	.011000	.042000	.017000	.057000	.071000	.003400
ROW 23 HOUSEHOLD	.206100	.401400	.047400	.140900	.205400	.478600	.080000	.081800	.201500	.755500	.044900	.421600
ROW 24 LOCAL	.018300	.019500	.004500	.015600	.041200	.016000	.059900	.028000	.007100	.038100	.044000	.065100

TABLE C-21. - GREEN RIVER 1980 DIRECT AND INDIRECT REQUIREMENTS

COLUMN	1	2	3	4	5	6	7	8	9	10	11	12
ROW 1 AGRICULTURE	1.226948	.007917	.001243	.007468	.004914	.649464	.010660	.007510	.008376	.004740	.006573	.007954
ROW 2 FORESTRY	.000897	1.000352	.000055	.001150	.000226	.000619	.404400	.000330	.000285	.000184	.000305	.000371
ROW 3 OIL AND GAS	.022647	.033605	1.013141	.022694	.028177	.020510	.027165	.053828	.015269	.415902	.025435	.030011
ROW 4 COAL	.033895	.026717	.005653	1.037490	.021248	.030173	.035503	.027752	.025322	.018199	.023841	.029470
ROW 5 URANIUM NON FUEL	.003511	.002002	.000672	.001909	1.252857	.002579	.002271	.001654	.032494	.001041	.001740	.002555
ROW 6 FOOD AND KINDRED	.033201	.010962	.001737	.010345	.006803	1.039982	.011439	.010405	.012031	.006767	.009106	.011018
ROW 7 LUMBER AND WOOD	.002232	.000876	.000137	.002875	.000563	.001540	1.005969	.000821	.000710	.000458	.000758	.000924
ROW 8 PRINTING PUBLISHING	.003528	.003044	.000527	.003530	.002998	.005351	.003553	1.007773	.006607	.002587	.003626	.023220
ROW 9 STONE CLAY GLASS	.001191	.001323	.001218	.002114	.000710	.001085	.002315	.001039	1.029666	.000980	.000982	.014555
ROW 10 CHEMICAL PETROLEUM COAL	.007075	.045310	.002692	.016137	.007755	.006499	.020991	.094847	.003836	1.008101	.003506	.005969
ROW 11 WHOLESALE TRADE	.022610	.008903	.001617	.009458	.008133	.019503	.025753	.011601	.010800	.005553	1.011786	.009934
ROW 12 SERVICE STATIONS	.012139	.029559	.002820	.010448	.006414	.114058	.023918	.010148	.008756	.006333	.010104	1.014450
ROW 13 EATING AND DRINKING	.034746	.030834	.005716	.030265	.019491	.030251	.032918	.029278	.025502	.016975	.026753	.031248
ROW 14 OTHER RETAIL	.177244	.152653	.022350	.136179	.090769	.163065	.167016	.139196	.119402	.076758	.122203	.157750
ROW 15 OIL FIELD SERVICE	.000340	.000504	.015197	.000340	.000423	.000308	.000407	.000887	.000229	.006239	.000382	.000450
ROW 16 LODGING	.005587	.004906	.000776	.004698	.003134	.004926	.005387	.004666	.004153	.002730	.004463	.005021
ROW 17 OTHER SERVICES	.008613	.036852	.005939	.032568	.028746	.077498	.061398	.073504	.062381	.023169	.047314	.040786
ROW 18 TRANSPORTATION	.072779	.033478	.014676	.059661	.043725	.098089	.121658	.039314	.077261	.066606	.135927	.062904
ROW 19 ELECTRIC ENERGY	.043904	.021083	.011390	.051070	.035673	.043018	.055665	.031680	.025382	.027464	.026109	.033430
ROW 20 OTHER UTILITIES	.027656	.016230	.003353	.017704	.014363	.031313	.024514	.021025	.018635	.018321	.040606	.070235
ROW 21 CONTRACT CONSTRUCTION	.013634	.011664	.002008	.016594	.010189	.012772	.012469	.011119	.009634	.006190	.016378	.016506
ROW 22 RENTAL FINANCE	.119944	.109008	.055425	.103040	.085962	.112181	.122263	.107175	.102310	.083289	.103701	.237400
ROW 23 HOUSEHOLD	.928962	.637126	.123241	.782217	.519102	.795246	.859576	.790882	.674343	.431042	.687526	.836681
ROW 24 LOCAL	.154947	.083919	.028764	.073825	.051968	.111015	.094697	.068053	.066657	.043112	.067517	.007019

TABLE C-21. - GREEN RIVER 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

COLUMN	13	14	15	16	17	18	19	20	21	22	23	24
ROW 1 AGRICULTURE	.067973	.009404	.000901	.025023	.004605	.009242	.003911	.002644	.004059	.011093	.013114	.006741
ROW 2 FORESTRY	.000326	.001149	.000045	.000186	.000235	.000372	.000360	.000144	.002870	.000505	.000570	.000401
ROW 3 OIL AND GAS	.013825	.021276	.002963	.015433	.020903	.022549	.067228	.114639	.014542	.025204	.026770	.028287
ROW 4 COAL	.020293	.027854	.003232	.016398	.020611	.033243	.228208	.014859	.015278	.039117	.043719	.027311
ROW 5 URANIUM NON FUEL	.001619	.001890	.000317	.001247	.002027	.001938	.002321	.001264	.022203	.002864	.002202	.023541
ROW 6 FOOD AND KINDRED	.107945	.013473	.001242	.014373	.006386	.012904	.005465	.003677	.005603	.015353	.018137	.009378
ROW 7 LUMBER AND WOOD	.000811	.002857	.000112	.000463	.000585	.000925	.000896	.000351	.007140	.001256	.001417	.000998
ROW 8 PRINTING PUBLISHING	.005123	.013304	.000328	.004785	.007574	.006784	.002807	.002499	.001701	.004817	.003981	.004100
ROW 9 STONE CLAY GLASS	.001775	.001095	.000154	.000527	.000731	.001419	.000897	.000524	.014345	.001593	.001708	.001094
ROW 10 CHEMICAL PETROLEUM CVAL	.003100	.004782	.002443	.002229	.002967	.004640	.004757	.001754	.004535	.005795	.006670	.003702
ROW 11 WHOLESALE TRADE	.019464	.017518	.001268	.009277	.007389	.044784	.006069	.006974	.051487	.013779	.010233	.012819
ROW 12 SERVICE STATIONS	.009467	.016875	.001216	.004997	.009910	.032886	.007358	.006720	.012082	.014413	.014954	.018381
ROW 13 EATING AND DRINKING	1.019521	.031501	.004274	.013705	.018143	.047007	.018248	.010714	.015952	.043320	.051275	.025623
ROW 14 OTHER RETAIL	.180097	1.152486	.016126	.077647	.105096	.158992	.070826	.072755	.076492	.218156	.240787	.133402
ROW 15 OIL FIELD SERVICE	.000207	.000319	1.000044	.000231	.000314	.000338	.001008	.001720	.000218	.000378	.000402	.000424
ROW 16 LODGING	.003112	.004854	.001538	1.092186	.002914	.009678	.002460	.001767	.002583	.006889	.008156	.004073
ROW 17 OTHER SERVICES	.062626	.072853	.004881	.070619	1.112582	.048700	.018177	.020280	.023082	.064264	.055835	.031380
ROW 18 TRANSPORTATION	.042170	.119176	.012783	.025023	.042754	1.179224	.064999	.057528	.042289	.045988	.049070	.033530
ROW 19 ELECTRIC ENERGY	.031182	.035034	.004563	.030861	.036179	.048132	1.051381	.016685	.018983	.037320	.031508	.042496
ROW 20 OTHER UTILITIES	.027318	.046545	.004043	.069583	.081567	.035631	.015622	1.055334	.013578	.032984	.022531	.036223
ROW 21 CONTRACT CONSTRUCTION	.011195	.012222	.004560	.009077	.011375	.012609	.012741	.005350	1.116208	.018656	.018783	.015906
ROW 22 RENTAL FINANCE	.091819	.139487	.011990	.112606	.078424	.104986	.059457	.080510	.065490	1.174087	.131340	.074888
ROW 23 HOUSEHOLD	.516328	.767936	.085364	.365912	.481191	.870365	.385779	.269249	.423523	1.176242	1.396379	.690967
ROW 24 LOCAL	.065260	.078326	.010919	.051049	.086230	.079851	.098917	.055270	.039337	.118813	.086555	1.117143

TABLE C-22

WASHINGTON STATE DETAILED INDUSTRY CLASSIFICATION

27 INDUSTRIES

<u>Industry</u>	<u>Standard Industrial Classification</u> ^{a/}
1. Field Crops	0113, 0119
2. Livestock & By-Products	0132, 0133, 0139, 0143, 0723
3. Vegetables, Fruits & Other Agriculture	0122, 0142, Part 0123 Part 0123, 0192, 0193
4. Forestry, Fishing & Mining	08, 09, 10-14
5. Meat & Dairy Products	201, 202
6. Canning & Beverages	203, 208
7. Grain Mills & Other Foods	204, 205-207, 209
8. Textiles & Apparel	22, 23
9. Lumber & Wood excluding plywood	241, 2421, 24 (except 241, 2421, and 2432)
10. Plywood	2432
11. Pulp & Paper	261, 262, 263-266
12. Printing & Publishing	27
13. Chemicals & Petroleum	281, 282-289, 29
14. Stone, Clay & Glass	321-323, 328, 329, 324-327
15. Iron & Steel	331, 332, 3391, 3399
16. Nonferrous Metals	3331-3333, 3339, 334, 3351, 33356, 3357, 3362, 3369, 3392 3334, 3352, 3361
17. Fabricated Metals	344, 341-343, 345-349
18. Machinery	351-353, 354, 359 355-358, 36
19. Aerospace	19 (part), 372
20. Other Transportation Equipment	371, 374, 375, 379, 373
21. Other Manufacturing	25, 30, 31, 38, 39, 19 (part)
22. Construction	15-17, 656
23. Transportation Services	40, 44, 45, 41, 42, 46, 47
24. Communication & Utilities	491, 492, 493, 494-497, 48
25. Trade	50, 52-59
26. Finance, Insurance Real Estate	60-62, 67 63, 64 65 (except 656), 66
27. Services	73, 81, 861, 862, 89 70-72, 75-80, 82-87 (except 861, 862)

^{a/} Based on the Standard Industrial Classification Manual, 1957
Bureau of the Budget.

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TABLE C-23

WASHINGTON STATE DETAILED INDUSTRY CLASSIFICATION

54 INDUSTRIES

<u>Industry</u>	<u>Standard Industrial Classification</u> ^{a/}
1. Field Crops, Including Seeds	011, 0142
2. Vegetables, Fruits & Nut Crops	012
3. Livestock & Livestock Products	013, 0142, 072, 0144
4. Special & Miscellaneous Products	019, 02, 073, 074
5. Fishing	09
6. Meat Products	201
7. Dairy Products	202
8. Canning and Preserving	203
9. Grain Mill Products	204
10. Beverage Industries	208
11. Other Foods	205-7, 209
12. Textile Mill Products	22
13. Apparel	23
14. Mining	10-14
15. Forestry	08
16. Logging	241
17. Sawmills	2421
18. Veneer and Plywood	2432
19. Miscellaneous Wood Products	2426, 2429, 2431, 2433, 244, 249
20. Furniture and Fixtures	25
21. Pulp Mills	261
22. Paper Mills	262
23. Misc. Paper & Paperboard Mills	263-266
24. Printing, Publishing & Allied Industries	27
25. Industrial Inorganic and Organic Chemicals	281
26. Other Chemicals	282-289
27. Petroleum Refining and Related Industries	29
28. Glass & Cut Stone Products	321-3, 328-9
29. Cement, Clay, Concrete, Gypsum and Plaster Products	324-7
30. Iron & Steel Rolling & Finishing Mills, Foundries & Forging	331-332, 3391, 3399
31. Non-Ferrous Metals Except Aluminum	3331-3, 334, 3339, 3356, 3357, 3351, 3362, 3369, 3392
32. Aluminum	3334, 3352, 3361
33. "Heavy" Fabricated Metal Products	334
34. "Light" Fabricated Metal Products	341-343, 345-349
35. Non-Electrical Motive and Moving Equipment	351, 352, 353

^{a/} Based on the Standard Industrial Classification Manual, 1957
Bureau of the Budget.

TABLE C-23 (cont)

WASHINGTON STATE DETAILED INDUSTRY CLASSIFICATION

54 INDUSTRIES

<u>Industry</u>	<u>Standard Industrial Classification</u>
36. Machine Tools and Shops	354, 359
37. Non-Elec. Industrial Processing Equipment	355, 356, 357, 358
38. Electrical Machinery, Equipment and Supplies	36
39. Aerospace	372
40. Motor Vehicles and Equipment, Railroad Cars	371, 374, 375, 379
41. Shipbuilding and Repairing	373
42. Finished Plastics, Luggage, Instruments, Rubber Products, Advertising Signs, Jewelry, Toys, Sporting Goods	19, 30, 31, 38, 39
43. Railroad Transport, Water Trans- port, Transport by Air, Motor Transport, Pipelines and Transport Services	40, 44, 45, 41-42, 46-47
44. Electric Companies and Systems	491
45. Gas Companies and Systems	492-3
46. Water Supply, Irrigation Systems, Sanitary Services	494-497
47. Communications	48
48. Construction	Part 15, Part 17, 16
49. Wholesale Trade & Retail Trade	50, 52-59
50. Finance	60-62, 67
51. Insurance	62-64
52. Real Estate	65, 66, exclude 656
53. Business Service	73, 81, 861, 862, 80
54. Personal Services	70-72, 75-80, 82-87 (except 861, 862)

TABLE C-24

WASHINGTON STATE DETAILED INDUSTRY CLASSIFICATION

19 INDUSTRIES

<u>Industry</u>	<u>Standard Industrial Classification</u> ^{a/}
1. Livestock and Products	013, 0142, 072, 0144
2. Other Agriculture, Fishing and Mining	01, except 013, 0142, 0144: 02, 073, 074, 09, 10-14
3. Food and Kindred Products	20
4. Timber	08
5. Sawmills	2421
6. Plywood	2432
7. Pulp, Paper & Paperboard Mills	26
8. Other Wood	2426, 2429, 2431, 2433, 244, 249
9. Chemicals	28
10. Petroleum Refining	29
11. Stone, Clay and Glass	32
12. Primary Metals	33
13. Aerospace	372
14. Other Non-Durable Mfg.	22, 23, 27, 19, 30, 31, 38, 39
15. Other Durable Mfg.	24, 34, 35-37
16. Transportation, Communication and Public Utilities	40-47
17. Wholesale and Retail Trade	50, 52-59
18. Services	70-73, 75-80, 82-89
19. Construction	Part 15, Part 17, 16

^{a/} Based on the Standard Industrial Classification Manual, 1957,
Bureau of the Budget.

TABLE C-25
WASHINGTON
1963
GROSS FLOWS

(ALL FIGURES IN MILLIONS OF DOLLARS
AT PRODUCERS' PRICES)

PURCHASING INDUSTRIES

RESOURCE			MANUFACTURING																	NON-COMMODITY						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
FIELD AND SEED CROPS	LIVESTOCK AND PRODUCTS	VEGETABLES, FRUITS AND OTHER AGRI.	FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14	MEAT AND DAIRY PRODUCTS SIC 201 AND 202	CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	GRAIN MILLS AND OTHER FOOD PRODUCTS SIC 204, 205-7 AND 209	TEXTILES AND APPAREL SIC 22-23	LUMBER AND WOOD PRODUCTS (EXC. PLYWOOD, SIC 2432)	PLYWOOD MILLS SIC 2432	PAPER AND ALLIED PRODUCTS SIC 26	PRINTING AND PUBLISHING SIC 27	CHEMICAL AND PETROLEUM PRODUCTS, SIC 28-29	STONE, CLAY AND GLASS PRODUCTS SIC 32	IRON AND STEEL SIC 331-332, 3391 AND 3399	NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	FABRICATED METAL PRODUCTS SIC 34	MACHINERY SIC 35-36	AEROSPACE SIC 37	OTHER TRANSPORTATION EQUIPMENT, SIC 37 (EXC. 372)	OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39	CONSTRUCTION SIC 15-17 AND 656	TRANSPORTATION SERVICES SIC 40-47	COMMUNICATION AND UTILITIES SIC 48-49	TRADES SIC 50-59	FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	SERVICES SIC 70-89

FINAL DEMAND

TOTAL SALES TO WASHINGTON INDUSTRY	WASHINGTON PERSONAL CONSUMPTION	WASHINGTON PRIVATE CAPITAL INVESTMENT	GOVERNMENT		EXPORTS		TOTAL FINAL DEMAND	TOTAL SALES
			WASHINGTON STATE, COUNTY AND LOCAL	FEDERAL	REST OF UNITED STATES	FOREIGN		

SELLING INDUSTRIES	RESOURCE	PURCHASING INDUSTRIES																									TOTAL SALES TO WASHINGTON INDUSTRY		WASHINGTON PERSONAL CONSUMPTION		WASHINGTON PRIVATE CAPITAL INVESTMENT	GOVERNMENT		EXPORTS		TOTAL FINAL DEMAND		TOTAL SALES			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	WASHINGTON STATE, COUNTY AND LOCAL	FEDERAL				REST OF UNITED STATES	FOREIGN	VALUE CREATED	TOTAL PURCHASES				
MANUFACTURING	FIELD AND SEED CROPS	1	9.1	6.9				1.7	46.5																			64.2	2.5					37.4	142.5	182.4	244.8	1			
	LIVESTOCK AND PRODUCTS	2		16.3			173.8		2.1																			0.2	192.4	38.5				4.5		43.0	233.4	2			
	VEGETABLES, FRUITS AND OTHER AGRI.	3			1.2			55.4	1.1	0.5				0.1									1.3					0.1	59.7	23.7		0.1		90.6	2.2	116.6	176.3	3			
	FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14	4				3.2		19.6	0.5		85.0	4.0	0.8		0.9	20.5	0.3	1.0				14.6	0.7				0.1	151.2	2.5		0.3	2.9	12.7	2.1	20.5	171.7	4				
	MEAT AND DAIRY PRODUCTS SIC 201 AND 202	5		0.7	0.3	34.1	1.0	3.2					0.7											0.6			1.0	41.6	259.2		8.0	14.4	65.5	11.1	358.2	399.8	5				
	CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	6		1.2	0.3	0.1	11.0	2.0																1.2			1.0	16.8	92.9		2.0	13.2	281.6	7.9	397.6	414.4	6				
	GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209	7		31.7	0.3	6.4	7.3	23.0																0.1		1.1	2.8	72.7	124.8		1.8	7.1	75.4	17.0	226.1	298.8	7				
	TEXTILES AND APPAREL SIC 22-23	8			0.1	0.7			1.9	3.5	0.2			0.3				0.1			0.1	0.1	0.6	1.0	0.2		0.1	8.9	18.0	0.4	0.1	1.4	43.4	0.3	63.6	72.5	8				
	LUMBER AND WOOD PRODUCTS, (EXC. PLYWOOD, SIC 2432), SIC 24 AND 25	9		1.1	0.3	0.1	0.6	0.2			156.4	34.0	62.5		0.2	0.1	0.1	0.4		0.1	0.2	0.7	4.3	60.7	2.8		1.2	0.1	326.1	2.8		1.8	5.4	351.6	31.8	393.4	719.3	9			
	PLYWOOD MILLS SIC 2432	10								3.5	9.8	3.1								0.3	0.6	1.1	5.1				0.1	23.6	1.2		0.2	4.1	166.0	1.0	172.3	196.1	10				
	PAPER AND ALLIED PRODUCTS SIC 26	11		0.1	7.6	0.1	4.9	14.4	9.2	0.4	0.3	0.1	61.9	10.3	1.6	4.5		0.3	0.7	0.5	0.7	0.4	1.1		0.6	0.8	134.6	11.0		2.1	5.7	496.1	39.6	554.5	689.1	11					
	PRINTING AND PUBLISHING SIC 27	12		0.1	0.1			1.6	2.7		0.7	0.2	0.2	2.7	0.4	0.5		0.1		0.1	2.6	0.2		0.8	0.7	1.7	41.2	15.3	10.8	82.7	30.5		1.2		8.4		40.1	122.8	12		
	CHEMICAL AND PETROLEUM [Ⓢ] PRODUCTS, SIC 28-29	13	9.3	3.0	5.9	2.0	1.0	1.2	1.3	0.1	4.0	6.9	17.9	2.0	12.2	4.5	0.2	1.4	1.7	0.1	1.7	1.3	0.9	13.4	24.6	4.3	13.2	2.6	5.3	142.0	110.9		6.7	220.9	92.2	2.1	432.8	574.8	13		
	STONE, CLAY AND GLASS PRODUCTS SIC 32	14	0.4		0.1	1.2	0.7	7.3	0.8					0.7	0.2	1.7		0.3	16.8	1.6	0.5	0.2	0.2	0.4	0.6		73.6	0.2	0.1	0.2		107.8	8.8		1.4	2.1	11.0	0.1	23.4	131.2	14
	IRON AND STEEL SIC 331-332, 3391 AND 3399	15								0.1		0.3			0.2	0.6	1.2	0.6	12.7	3.7	0.2	9.0	0.2	13.3	0.6	0.1		42.8			2.3	0.2	2.6	20.2	0.2	25.5	68.3	15			
	NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	16	1.4		0.5					0.2		0.1			1.8	0.1	0.2	16.3	0.8	2.0	2.3	1.9	1.2	2.8		0.2		31.8	0.2	2.1		0.7	332.0	51.2	386.2	418.0	16				
	FABRICATED METAL PRODUCTS SIC 34	17			0.2	1.3	25.4	0.1	0.1	1.2		0.8	0.2	1.8	0.8	0.1	0.1	3.8	1.1	1.0	3.5		41.8	0.8	1.0	0.8	2.8	88.7	2.8	5.3	1.1	7.2	47.5	2.0	65.9	154.6	17				
	MACHINERY SIC 35-36	18			0.8		0.6	0.1		1.9	0.6	1.7		1.3	1.2	0.1	0.2	0.7	5.1	10.9	2.5	0.1	4.5	0.4	0.8	0.5	0.6	34.6	5.2	30.0	1.1	25.3	101.6	8.6	171.8	206.4	18				
	AEROSPACE SIC 37	19												0.1										0.8				15.9				0.4	775.4	319.2	99.2	1,194.2	1,210.1	19			
	OTHER TRANSPORTATION [Ⓢ] EQUIPMENT, SIC 37 (EXC. 372)	20	0.5	0.3	0.1	0.4			0.1				0.2	0.2								0.8			1.1		0.8		4.5	9.9	0.7	0.1	187.5	98.2	7.3	304.7	309.2	20			
	OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39	21			0.1					0.4	0.1	0.6							0.1	2.1	0.8	2.7	2.2	0.1	0.1	0.6	0.1	0.3	10.3	9.6	9.4	1.4	2.1	52.6	0.4	75.5	85.8	21			
NON-COMMODITY	CONSTRUCTION SIC 15-17 AND 656	22	4.8	3.6	2.4	0.1	1.3	1.7	0.8	0.1	0.4	0.2	1.5	0.4	1.1		0.4	0.1		0.3	2.1	0.4		1.1	12.6	12.6	14.3	11.5	14.7	88.5	65.0	592.2	258.0	28.2	1.6	945.0	1,033.5	22			
	TRANSPORTATION SERVICES SIC 40-47	23	1.2	1.7	0.8	1.2	10.5	14.0	7.8	0.1	42.5	5.7	14.9	0.8	10.0	6.8	1.1	4.6	0.8	0.5	1.3	1.3	1.6	15.4	2.3	3.9	19.8	5.0	5.8	181.4	105.7	5.4	4.6	15.2	172.0	43.2	346.1	527.5	23		
	COMMUNICATION AND UTILITIES [Ⓢ] SIC 48-49	24	4.8	2.3	3.6	1.0	4.2	7.1	4.1	0.4	6.3	2.1	21.1	1.8	13.4	2.5	2.2	21.2	2.2	1.9	9.9	1.6	1.2	4.9	8.3	32.9	74.5	17.7	33.3	306.5	250.9		24.0	15.9	34.6		325.4	631.9	24		
	TRADES SIC 50-59	25	4.3	5.0	1.6	2.1	10.2	13.6	6.8	0.4	24.9	4.8	15.8	1.2	3.0	3.2	4.2	2.7	1.7	3.0	2.7	3.0	1.7	42.7	8.5	3.4	25.2	6.7	33.3	235.7	1,451.9	12.0	13.6	4.2	31.0	5.3	1,518.0	1,753.7	25		
	FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	26	3.1	2.2	2.5	2.7	2.3	5.4	3.2	0.8	5.3	1.7	8.8	1.5	3.9	2.0	1.0	3.9	2.0	2.0	3.6	2.7	1.0	10.1	6.2	6.3	53.6	42.9	35.3	216.0	361.0	3.5	15.3	24.3	36.9		441.0	657.0	26		
	SERVICES SIC 70-89	27	7.7	1.6	3.7	2.0	6.3	7.1	5.8	0.8	9.1	2.9	5.3	5.6	6.0	1.4	1.0	3.1	1.7	2.0	6.0	4.9	1.4	27.3	16.3	9.9	45.4	21.0	55.4	259.7	649.1		16.4	14.6	57.5	1.0	738.6	998.3	27		
TOTAL PURCHASES FROM WASHINGTON INDUSTRY		46.6	76.7	30.3	19.0	257.2	196.0	123.2	7.2	342.8	73.2	219.1	26.6	59.8	65.7	13.7	56.4	29.0	22.7	63.1	36.3	19.1	336.6	89.7	98.1	305.9	123.1	203.6	2,940.7	3,638.6	663.3	361.9	1,380.4	3,041.3	476.1	9,562.6	12,503.3				
IMPORTS	REST OF UNITED STATES	63.0	79.8	9.8	19.3	58.6	51.0	68.1	33.3	24.6	22.2	117.8	6.0	90.7	10.6	9.6	194.9	52.7	61.7	517.7	93.3	17.9	272.0	47.4	72.4	21.2	11.4	112.9	2,139.9	1,526.7	288.9	246.8				2,062.4	4,202.3				
	FOREIGN	4.1		2.1		1.3		6.1	0.2	36.5	21.6	15.6	16.5	141.5	1.2	0.5	17.4	4.9	0.6								8.3		0.3	284.3	81.1					81.1	365.4				
	VALUE CREATED [Ⓢ]	132.9	78.9	134.1	133.4	82.7	167.4	101.4	31.8	315.6	79.1	336.6	73.7	282.8	53.7	44.5	149.3	68.0	121.4	629.3	177.4	45.4	424.9	390.4	461.4	1,418.3	522.5	681.5	7,138.4	853.6		590.3	483.7			1,927.6	9,066.0				
TOTAL PURCHASES		246.6	235.4	176.3	171.7	399.8	414.4	298.8	72.5	719.5	196.1	689.1	122.8	574.8	131.2	68.3	418.0	154.6	206.4	1,210.1	309.2	85.8	1,033.5	527.5	631.9	1,753.7	657.0	998.3	12,503.3	6,100.0	952.2	1,200.0	1,864.1	3,041.3	476.1	13,623.7	26,137.0				

FOOTNOTES: ① INCLUDES HANFORD ATOMIC ENERGY WORKS ② INCLUDES BREMERTON NAVAL SHIPYARD ③ INCLUDES GOVERNMENT UTILITIES (P.U.D.'S, BPA) ④ INCLUDES COMPENSATION OF EMPLOYEES, RENTAL PAYMENTS, NET INTEREST PAYMENTS, CAPITAL CONSUMPTION, ALLOWANCES, BUSINESS TAX PAYMENTS, AND BUSINESS INCOME.

A.

B.

PURCHASING INDUSTRIES

TABLE C-26
WASHINGTON
1963
DIRECT INPUT
COEFFICIENTS
(In Cents, Producers' Prices)

		TABLE C-26 WASHINGTON 1963 DIRECT INPUT COEFFICIENTS (In Cents, Producers' Prices)																											
		RESOURCE					MANUFACTURING																			NON-COMMODITY			
		FIELD AND SEED CROPS	LIVESTOCK AND PRODUCTS	VEGETABLES, FRUITS AND OTHER AGRI.	FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14	MEAT AND DAIRY PRODUCTS SIC 201 AND 202	CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209	TEXTILES AND APPAREL SIC 22-23	LUMBER AND WOOD PRODUCTS (EXC. PLYWOOD, SIC 2432), SIC 24 AND 25	PLYWOOD MILLS SIC 2432	PAPER AND ALLIED PRODUCTS SIC 26	PRINTING AND PUBLISHING SIC 27	CHEMICAL AND PETROLEUM ¹ PRODUCTS, SIC 28-29	STONE, CLAY AND GLASS PRODUCTS SIC 32	IRON AND STEEL SIC 331-332, 3391 AND 3399	NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	FABRICATED METAL PRODUCTS SIC 34	MACHINERY SIC 35-36	AEROSPACE SIC 37	OTHER TRANSPORTATION ² EQUIPMENT, SIC 37 (EXC. 372)	OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39	CONSTRUCTION SIC 15, 17, AND 656	TRANSPORTATION SERVICES SIC 40-47	COMMUNICATION AND UTILITIES ³ SIC 48-49	TRADES SIC 50-59	FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	SERVICES SIC 70-89	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
SELLING INDUSTRIES	RESOURCE	1	3.69	2.93			.41	15.56																					
	LIVESTOCK AND PRODUCTS	2		6.92		43.47		.70																				.02	
	VEGETABLES, FRUITS AND OTHER AGRI.	3			.68		13.37	.37	.69					.02									.12					.01	
	FORESTRY, FISHING AND MINING SIC 08, 09 AND 10-14	4				1.86	4.73	.17		11.81	2.04	.12		.16	15.62	.44	.24						1.41	.13				.01	
	MEAT AND DAIRY PRODUCTS SIC 201 AND 202	5		.30		.18	8.53	.24	1.07					.12										.11				.10	
	CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	6		.51		.18	.02	2.65	.67															.23				.10	
	GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209	7		13.47		.18	1.60	1.76	7.70															.02		.06		.28	
	TEXTILES AND APPAREL SIC 22-23	8			.06	.41			.64	4.83	.03		.04				.02			.01	.03	.70	.10	.04				.01	
	LUMBER AND WOOD PRODUCTS (EXC. PLYWOOD, SIC 2432), SIC 24 AND 25	9		.62	.18	.02	.14	.07		21.74	17.34	9.07		.04	.08	.15	.10		.05	.02	.23	5.01	5.87	.53		.07		.01	
	PLYWOOD MILLS SIC 2432	10								.49	5.00	.45								.02	.19	1.28	.49					.01	
	PAPER AND ALLIED PRODUCTS SIC 26	11		.04	4.31	.06	1.23	3.48	3.08	.55	.04	.05	8.98	8.39	.28	3.43		.02	.45	.24	.06	.13	1.28		.11	.13	.77	.05	.05
	PRINTING AND PUBLISHING SIC 27	12		.04	.06		.39	.90		.10	.10	.03	2.20	.07	.38		.02		.05	.22	.06		.07	.13	.27	2.35	2.33	1.08	
	CHEMICAL AND PETROLEUM ¹ PRODUCTS, SIC 28-29	13	3.77	1.27	3.35	1.16	.25	.29	.44	.14	.56	3.52	2.60	1.63	2.12	3.43	.29	.34	1.10	.05	.14	.42	1.05	1.30	4.66	.68	.75	.40	.53
	STONE, CLAY AND GLASS PRODUCTS SIC 32	14	.16		.06	.70	.18	1.76	.27		.10	.10	.25		.05	12.80	2.34	.12	.13	.10	.03	.19		7.12	.04	.02	.01		
	IRON AND STEEL SIC 331-332, 3391 AND 3399	15								.01		.04		.04	.46	1.76	.14	8.22	1.80	.02	2.91	.33	1.29	.11	.02				
	NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	16	.57		.28					.03		.02		.31	.08	.29	3.90	.52	.97	.19	.61	1.40	.27		.03				
	FABRICATED METAL PRODUCTS SIC 34	17				.12	.32	6.13	.03	.14	.17		.12	.16	.31	.61	.15	.02	2.46	.53	.08	1.13		4.04	.15	.16	.05	.28	
	MACHINERY SIC 35-36	18				.47		.14	.03		.26	.31	.25		.23	.92	.15	.05	.45	2.47	.90	.81	.12	.44	.08	.13	.03	.06	
	AEROSPACE SIC 37	19													.02						1.24			.15					
	OTHER TRANSPORTATION ² EQUIPMENT, SIC 37 (EXC. 372)	20	.20	.13	.06	.23			.01						.04	.15					.26		.21		.03				
	OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39	21			.06							.06	.08	.10					.05	.17	.26	3.15	.21	.02	.02	.03	.02	.03	
NON-COMMODITY	CONSTRUCTION SIC 15-17 AND 656	22	1.95	1.53	1.36	.06	.32	.41	.27	.14	.06	.10	.22	.33	.19		.59	.02		.14	.17	.13		.11	2.39	1.99	.82	1.75	1.47
	TRANSPORTATION SERVICES SIC 40-47	23	.49	.72	.45	.70	2.63	3.38	2.61	.14	5.91	2.91	2.16	.65	1.74	5.18	1.61	1.10	.52	.24	.11	.42	1.86	1.49	.44	.62	1.13	.76	.58
	COMMUNICATION AND UTILITIES ³ SIC 48-49	24	1.95	.98	2.04	.58	1.05	1.71	1.37	.55	.88	1.07	3.06	1.47	2.33	1.91	3.22	5.07	1.42	.92	.82	.52	1.40	.47	1.57	8.37	4.25	2.69	3.34
	TRADES SIC 50-59	25	1.74	2.12	.91	1.22	2.55	3.28	2.28	.55	3.46	2.45	2.29	.98	.52	2.44	6.15	.65	1.10	1.45	.22	.97	1.98	4.13	1.61	.54	1.44	1.02	3.34
	FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	26	1.26	.94	1.42	1.57	.58	1.30	1.07	1.10	.74	.87	1.28	1.22	.68	1.52	1.46	.93	1.29	.97	.30	.87	1.17	.98	1.18	1.00	3.06	6.53	3.54
	SERVICES SIC 70-89	27	3.12	.68	1.53	1.16	1.58	1.71	1.94	1.10	1.26	1.48	.77	4.56	1.04	1.07	1.46	.74	1.10	.97	.50	1.58	1.63	2.64	3.09	1.57	2.59	3.20	5.55
IMPORTS	SUBTOTAL		18.90	32.58	17.19	11.06	64.33	47.30	41.23	9.93	47.64	37.33	31.79	21.66	10.40	30.08	20.06	13.49	18.76	11.00	5.21	11.74	22.26	32.57	17.00	15.52	17.44	18.74	20.39
	REST OF UNITED STATES		25.55	33.90	5.56	11.24	14.66	12.31	22.79	45.93	3.41	11.32	17.09	4.80	15.78	8.08	14.06	46.62	34.09	29.89	42.78	30.17	20.86	26.32	8.98	11.46	1.21	1.74	11.31
	FOREIGN		1.66		1.19		.32	2.04	.28	5.07	11.01	2.26	13.44	24.62	.91	.73	4.16	3.17	.29		.71	3.96				.47			.03
VALUE CREATED ^a			53.89	33.52	76.06	77.69	20.68	40.40	33.94	43.86	43.86	40.34	48.84	60.02	49.20	40.93	65.15	35.72	43.98	58.82	52.00	57.37	52.91	41.11	74.01	73.02	80.87	79.52	68.26
TOTAL PURCHASES			100.00	100.00	100.00	99.99	99.99	100.01	100.00	99.98	100.00	99.98	100.00	100.00	100.00	100.00	99.99	100.00	100.00	99.99	99.99	99.99	100.00	99.99	100.00	99.99	100.00	99.99	99.99

For Footnotes, See Table I-2

B

FINAL DEMAND CHANGE OF \$100 THOUSAND FOR OUTPUT OF INDUSTRY:

PURCHASING INDUSTRIES

RESOURCE

MANUFACTURING

NON-COMMODITY

TABLE C-27
WASHINGTON
1963
DIRECT AND INDIRECT
REQUIREMENTS

SELLING INDUSTRIES

RESOURCE

MANUFACTURING

NON-COMMODITY

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
FIELD AND SEED CROPS	104317	6224	635	655	3508	1329	18048	361	610	506	531	551	412	593	589	326	418	479	396	474	502	483	628	611	692	682	667
LIVESTOCK AND PRODUCTS	2377	109743	3113	3118	53361	2913	1647	1768	2973	2475	2600	2692	2062	2890	2883	1597	2049	2349	1944	2321	2455	2358	3092	2993	3336	3339	3070
VEGETABLES, FRUITS AND OTHER AGRI.	516	570	101360	681	540	14435	992	1111	645	536	563	582	450	627	623	345	442	507	420	501	536	638	690	649	721	723	674
FORESTRY, FISHING AND MINING	347	345	541	102364	375	5723	612	186	15778	5299	2023	430	391	18687	1228	456	315	282	205	344	1143	3948	631	374	388	397	373
MEAT AND DAIRY PRODUCTS SIC 201 AND 202	3860	3677	5055	5107	113012	4780	4900	2870	4836	4023	4223	4371	3330	4703	4680	2593	3327	3813	3155	3767	3987	3830	5051	4858	5414	5420	4972
CANNING, PRESERVING AND BEVERAGES, SIC 203 AND 208	1329	1736	1739	1874	1542	104298	2008	988	1696	1397	1459	1507	1120	1649	1615	894	1146	1312	1085	1297	1377	1327	1929	1673	1866	1867	1781
GRAIN MILLS AND OTHER FOOD PRODUCTS, SIC 204, 205-7 AND 209	2309	17628	3017	3144	11427	4675	110751	1715	2903	2407	2532	2619	1949	2823	2800	1548	1987	2277	1883	2251	2383	2297	2980	2901	3304	3242	3233
TEXTILES AND APPAREL SIC 22-23	279	333	426	790	311	370	990	105279	450	317	365	319	235	417	340	213	239	274	236	307	1051	396	397	350	390	390	363
LUMBER AND WOOD PRODUCTS (EXC. PLYWOOD, SIC 2432), SIC 24 AND 25	498	516	1902	669	691	1355	948	337	128454	23766	13288	1519	396	1133	681	371	373	439	324	712	7466	8074	1310	597	752	641	586
PLYWOOD MILLS SIC 2432	47	43	83	47	49	72	59	30	701	105418	627	93	34	68	48	25	33	37	58	246	1473	600	63	56	61	61	65
PAPER AND ALLIED PRODUCTS SIC 26	768	1273	5741	1043	2555	5698	4578	1210	1051	896	110729	10264	939	5319	1051	534	1167	1008	674	883	2239	1135	1110	1092	2105	1312	1139
PRINTING AND PUBLISHING SIC 27	1384	1342	1790	1680	1402	2081	2346	987	1872	1588	1558	103799	1176	2136	1757	935	1178	1364	1261	1362	1423	1557	1854	1936	4319	4383	2944
CHEMICAL AND PETROLEUM PRODUCTS, SIC 28-29	6226	3582	6421	3981	3301	3880	3541	1778	3997	6447	5560	4445	104070	7286	3153	1886	3088	2194	1884	2581	3583	4064	7576	3491	3923	3543	3378
STONE, CLAY AND GLASS PRODUCTS SIC 32	699	502	630	1247	678	2627	778	259	708	539	737	439	365	115289	3204	384	678	505	320	644	378	8609	678	611	556	619	556
IRON AND STEEL SIC 331-332, 3391 AND 3399	108	94	111	110	121	650	90	59	139	92	150	99	127	716	101908	202	8641	1982	93	3148	321	1783	260	147	109	118	132
NONFERROUS METALS SIC 333, 334, 335, 336 AND 3392	664	72	352	49	56	128	142	25	84	56	69	44	365	162	354	104082	612	1072	237	699	1541	363	64	83	48	48	47
FABRICATED METAL PRODUCTS SIC 34	396	372	449	507	723	6866	418	365	626	379	503	540	584	1138	555	234	102792	848	325	1458	323	4529	658	622	499	489	741
MACHINERY SIC 35-36	151	128	195	656	140	401	184	94	591	564	476	177	349	1352	344	145	605	102663	1036	968	289	719	269	309	217	187	235
AEROSPACE SIC 37	6	6	7	6	9	11	9	3	17	12	10	6	24	15	8	4	5	4	01258	5	8	8	160	6	7	7	6
OTHER TRANSPORTATION EQUIPMENT, SIC 37 (EXC. 3721)	369	280	262	438	218	214	192	115	264	187	183	178	169	420	200	107	136	153	126	100412	168	183	410	196	265	218	197
OTHER MANUFACTURING SIC 19, 30, 31, 38 AND 39	166	135	214	261	146	193	155	117	208	172	243	272	242	211	194	106	137	206	309	421	103414	382	130	219	260	243	235
CONSTRUCTION SIC 15-17 AND 656	3764	3239	3580	2160	2868	2744	2391	1389	2360	2000	2208	2319	1653	2248	2743	1267	1531	1795	1497	1768	1813	101894	4555	4230	3277	4244	3753
TRANSPORTATION SERVICES SIC 40-47	2890	3199	3644	3623	5684	6631	5324	1819	10568	6927	5724	3521	3685	9070	4601	2700	2664	2508	1920	2711	4791	4783	103483	3513	4366	4004	3536
COMMUNICATION AND UTILITIES SIC 48-49	8190	6399	9977	7950	7464	9553	7846	4917	8771	7741	10276	8612	7436	9947	10871	9632	6960	6814	5514	6348	7850	6950	9130	116317	12829	11224	11219
TRADES SIC 50-59	22766	19855	28329	27703	22780	28171	22653	16057	30663	25167	25803	24903	18045	28451	31670	14684	19621	22150	17194	21509	23909	25549	28328	26817	130733	30410	29785
FINANCE, INSURANCE AND REAL ESTATE, SIC 60-67 (EXC. 656)	8239	6922	10363	10197	7513	9905	8063	6210	9803	8365	9064	9178	6385	10524	9963	5587	7370	7700	5733	7549	8397	8245	9915	9548	12751	116469	12480
SERVICES SIC 70-89	14235	10182	15708	14832	12220	15012	13176	9158	15512	13345	12972	17138	10151	14824	14790	8098	10593	11622	9203	12160	13062	13890	17005	15232	17952	18706	119581
VALUE CREATED	121359	98827	159114	154635	107181	140756	113866	90447	151083	126091	132715	137501	102147	146625	147348	81624	104752	120150	99452	118666	125433	120225	154931	153056	170493	170708	152896

For Footnotes, See Table I-2

Each entry represents the output required directly, indirectly, from the Washington industry named at the beginning of the row for each 100 thousand dollars of delivery to final demand by the industry named at the head of the column.

	1	2	3	4	5	6	7	8	9	10				
	FIELD CROP	VEGETABLES	LVSTK&PROD	CTHR	AGRI	FISHING	MEAT	PRODS	DAIRY	PROD	CANN&PRES	GRAIN	MLLS	BEVERAGES
1	FIELD CROP	15.0	0.0	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.1	3.3	
2	VEGETABLES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.0	0.0	0.0	1.5	
3	LVSTK&PROD	0.0	0.0	25.6	0.0	0.0	0.0	155.5	120.9	0.0	0.0	0.1	0.0	
4	CTHR AGRI	0.0	1.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	
5	FISHING	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	16.3	0.0	0.0	0.0	
6	MEAT PRODS	0.0	0.0	0.0	0.0	0.3	12.2	0.0	0.0	1.3	2.8	0.0	0.0	
7	DAIRY PROD	0.0	0.0	1.1	0.0	0.2	0.4	39.2	0.1	0.0	0.0	0.0	0.0	
8	CANN&PRES	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	4.1	0.7	0.0	0.0	
9	GRAIN MLLS	0.0	0.0	48.7	0.0	0.2	7.3	0.0	0.0	1.3	4.3	0.0	0.0	
10	BEVERAGES	0.0	0.0	1.9	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	15.4	
11	CTHR FOODS	0.0	0.0	1.1	0.0	0.3	1.0	2.1	6.8	1.4	2.5	0.0	0.0	
12	TEXTILES	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.5	0.0	0.0	
13	APPAREL	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	2.3	0.0	0.0	
14	MINING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	FORESTRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	LOGGING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
17	SAWMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18	PLYWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	CTHR WOOD	0.0	1.2	0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	1.0	0.0	
20	FURN&FIX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21	PULPMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22	PAPER MLLS	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
23	PAPBD MILS	0.0	6.8	0.2	0.9	0.0	3.3	4.5	10.8	3.5	12.3	0.0	0.0	
24	PRINT&PUBS	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.0	3.1	0.0	0.0	
25	INDUS&CHEM	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	
26	CTHR CHEM	4.9	4.9	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.0	0.0	
27	PET REFIN	11.9	1.7	5.4	0.6	1.4	0.0	0.9	0.4	0.2	0.9	0.0	0.0	
28	GLAS&STONE	0.2	0.0	0.0	0.2	0.0	0.0	1.1	2.3	0.0	11.2	0.0	0.0	
29	CEM&CLAY	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30	IRON&STEEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
31	NONFER MET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
32	ALUMINUM	2.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
33	HEAVY METL	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0	
34	LITE METL	0.0	0.0	0.0	0.0	0.0	1.9	0.0	24.8	0.0	22.0	0.0	0.0	
35	MCNELC EQP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
36	MACH TOOL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	
37	MCNELC EQP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.2	0.0	0.0	
38	ELEC MACH	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
39	AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
40	MOTOR VEH	0.8	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
41	SHIP BLDG	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
42	CTHR MFGS	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
43	TRANSPORT	2.0	0.7	2.6	0.3	0.3	8.1	7.6	12.2	2.8	9.7	0.0	0.0	
44	ELEC COMPY	4.9	0.8	1.7	0.2	0.0	0.6	0.8	1.4	0.7	0.8	0.0	0.0	
45	GAS COMPY	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.8	0.7	0.6	0.0	0.0	
46	WATER SERV	1.2	0.8	0.0	0.3	0.0	0.8	0.4	1.8	0.0	1.1	0.0	0.0	
47	COMMUNICAT	2.0	1.4	1.9	1.2	0.2	1.1	0.6	1.0	0.2	2.9	0.0	0.0	
48	CONSTR	8.0	2.3	5.6	0.7	-0.0	1.1	1.0	1.1	0.8	1.7	0.0	0.0	
49	WHSLE&RFT	7.2	1.4	7.8	0.7	0.9	7.8	8.5	12.2	2.4	8.9	0.0	0.0	
50	FINANCE	2.3	1.0	0.9	0.7	0.2	1.1	0.6	2.7	1.0	1.3	0.0	0.0	
51	INSURANCE	2.8	1.1	2.5	0.3	0.3	0.9	0.9	2.4	1.0	1.7	0.0	0.0	
52	REA ESTATE	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0	0.0	
53	BUSI SERV	10.8	1.2	0.8	1.0	1.3	3.5	4.1	4.5	2.6	4.2	0.0	0.0	
54	PERS SERV	2.0	0.9	1.7	0.3	-0.0	1.0	1.4	1.4	0.6	1.1	0.0	0.0	
55	SUBTOTS	79.1	29.6	120.9	7.7	8.7	208.9	197.0	185.7	66.7	108.2	0.0	0.0	
56	VAL ADD	221.3	132.0	122.5	31.1	24.4	59.9	71.8	126.4	25.4	142.8	0.0	0.0	
57	IMPORTS	110.3	8.4	122.3	7.5	3.3	91.7	9.9	46.5	85.8	37.7	0.0	0.0	
58	TOTAL	410.7	170.0	365.7	46.3	36.4	360.5	278.7	358.6	177.9	288.7	0.0	0.0	

TABLE C-28. - WASHINGTON 1980 GROSS FLOWS (Cont.)

	11	12	13	14	15	16	17	18	19	20
	OTH FOODS	TEXTILES	APPAREL	MINING	FORESTRY	LOGGING	SAWMILLS	PLYWOOD	OTHER WOOD	FURN&FIX
1 FIELD CROP	32.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 VEGETABLES	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 LIVESTOCK	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 OTHER AGRI	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 FISHING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6 MEAT PRODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 DAIRY PROD	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 CANNIPRES	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 GRAIN MILLS	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 BEVERAGES	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 OTH FOODS	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 TEXTILES	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
13 APPAREL	0.0	0.0	6.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0
14 MINING	0.7	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
15 FORESTRY	0.0	0.0	0.0	0.0	3.2	90.2	15.0	5.2	1.1	0.0
16 LOGGING	0.0	0.0	0.0	0.0	0.0	16.1	73.7	31.8	11.4	0.0
17 SAWMILLS	0.0	0.0	0.0	0.0	0.0	0.0	14.4	5.2	15.5	6.1
18 PLYWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.4	3.7	2.0
19 OTHER WOOD	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	1.4
20 FURN&FIX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
21 PULPMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 PAPER MILLS	0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 FABRD MILS	9.8	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.2	1.4
24 PRINT&PUBS	4.4	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.1	0.0
25 INDUS&CHEM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
26 OTHER CHEM	0.3	1.9	0.2	0.0	0.0	0.0	0.2	11.0	0.2	1.8
27 PET REFIN	1.5	0.0	0.0	2.6	0.0	1.2	1.3	0.0	0.9	0.2
28 GLASS&STONE	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
29 CEMENT&CLAY	0.0	0.0	0.0	2.2	0.0	0.0	0.3	0.3	0.1	0.0
30 IRON&STEEL	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.4
31 NONFER MET	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32 ALUMINUM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9
33 HEAVY METL	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0
34 LITE METL	0.2	0.0	0.2	0.2	0.0	0.4	0.4	0.0	0.4	0.1
35 NONELC EQP	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0
36 MACH TOOL	0.0	0.0	0.0	0.4	0.0	0.4	0.5	0.3	0.1	0.0
37 NONELC EQP	0.2	0.0	0.0	1.0	0.0	0.5	0.4	0.4	0.0	0.0
38 ELEC MACH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39 AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 MOTOR VEH	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
41 SHIP BLDG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42 OTHER MFGS	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
43 TRANSPORT	9.3	0.0	0.2	2.0	0.0	23.4	21.0	7.3	3.2	2.8
44 ELEC COMPY	0.4	0.0	0.2	0.8	0.0	0.0	3.2	1.3	0.4	0.2
45 GAS COMPY	1.7	0.0	0.0	0.4	0.0	0.0	0.4	0.3	0.2	0.2
46 WATER SERV	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
47 COMMUNICAT	1.6	0.2	0.4	0.2	0.3	1.3	1.0	0.9	0.2	0.4
48 CONSTR	0.4	-0.0	0.2	-0.0	-0.0	0.3	-0.0	0.3	0.1	-0.0
49 WHOLESALE	8.2	-0.0	0.8	2.8	-0.0	9.8	13.2	6.2	4.4	2.8
50 FINANCE	1.2	0.2	0.4	0.6	0.9	0.8	0.8	0.6	0.2	0.2
51 INSURANCE	1.6	0.2	0.8	1.0	1.2	1.0	2.1	1.5	1.0	0.6
52 REA ESTATE	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
53 BUSI SERV	5.0	-0.0	1.0	1.2	0.3	1.0	3.4	2.4	1.4	0.2
54 PERS SERV	1.2	-0.0	0.6	0.6	-0.0	1.3	1.4	1.3	0.8	0.6
55 SUBTOTALS	120.8	2.5	13.9	17.3	5.9	143.7	153.2	89.5	49.9	24.3
56 VAL ADD	133.9	8.4	55.3	54.5	114.9	154.4	146.4	100.9	47.8	41.3
57 IMPORTS	23.9	11.1	53.7	29.3	2.4	23.6	23.6	59.9	42.7	17.4
58 TOTAL	278.6	22.0	122.9	101.1	123.2	328.7	323.2	250.3	140.4	83.0

	21	22	23	24	25	26	27	28	29	30				
	PULPMILLS	PAPER	MILLS	PAP3D	MILLS	PRINT&PUBS	INDUS&CHEM	OTHER	CHEM	PET	REFINE	GLASS&STONE	CEM&CLAY	IRON&STEEL
1	FIELD CRP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	VEGETABLES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	LVST&PROD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	OTHER AGRI	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
5	FISHING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MEAT PROD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	DAIRY PROD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	CANN&PRES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	GRAIN MILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	BEVERAGES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	OTH FOODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	TEXTILES	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	APPAREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	MINING	0.0	1.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.8	35.0	0.6	0.6
15	FORESTRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	LOGGING	30.0	27.6	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	SAWMILLS	6.3	9.4	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
18	PLYWOOD	0.8	3.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	OTHER WOOD	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2
20	FURN&FIX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	PULPMILLS	1.6	13.2	36.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	PAPER MILLS	0.1	0.3	9.2	18.1	0.0	0.6	0.2	0.2	0.2	0.2	0.2	0.4	0.0
23	PAP3D MILS	0.0	6.9	18.5	0.2	0.0	4.7	0.2	4.7	0.2	3.1	4.4	4.4	0.0
24	PRINT&PUBS	0.0	0.1	5.3	0.1	0.0	1.3	0.2	1.3	0.2	0.3	0.2	0.2	0.0
25	INDUS&CHEM	7.6	4.0	1.2	0.0	0.0	19.2	2.3	19.2	2.3	0.0	0.0	0.0	0.0
26	OTHER CHEM	0.7	2.7	1.4	3.5	0.4	9.9	0.2	9.9	0.2	0.8	0.2	0.2	0.2
27	PET REFIN	1.6	4.8	2.9	0.0	0.0	2.6	4.1	2.6	4.1	0.0	7.0	0.0	0.1
28	GLASS&STONE	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0	1.7
29	CEM&CLAY	2.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	20.3	0.9	0.9
30	IRON&STEEL	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	2.4	2.4
31	NONFER MET	0.1	0.0	0.0	0.0	0.0	1.9	0.0	1.9	0.0	0.0	0.2	0.4	0.4
32	ALUMINUM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	HEAVY METL	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.8	0.0	0.0
34	LITE METL	0.2	0.5	0.2	0.4	0.0	0.6	2.1	0.6	2.1	0.0	0.8	0.2	0.2
35	NONELC EQP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
36	MACH TOOL	0.1	0.0	0.0	0.0	0.0	1.9	0.0	1.9	0.0	0.0	1.4	0.2	0.2
37	NONELC EQP	0.5	1.3	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	ELEC MACH	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.6	0.6	0.6
39	AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	MOTOR VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0
41	SHIP BLDG	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0
42	OTHER MFGS	0.1	0.1	0.3	0.2	0.1	1.3	0.1	1.3	0.1	0.0	0.0	0.0	0.0
43	TRANSPORT	4.3	10.0	6.6	1.4	0.6	2.6	10.7	2.6	10.7	0.8	11.1	2.1	2.1
44	ELEC COMPLY	1.2	6.9	3.0	0.9	1.7	0.6	2.6	0.6	2.6	0.6	1.4	2.3	2.3
45	GAS COMPLY	1.6	9.9	3.1	0.4	0.0	0.0	0.4	0.0	0.4	0.6	0.9	1.3	1.3
46	WATER SERV	0.8	0.7	0.3	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.2	0.0	0.0
47	COMMUNICAT	0.2	1.1	0.5	2.0	0.1	0.6	0.5	0.6	0.5	0.2	0.8	0.6	0.6
48	CONSTR	0.5	0.9	0.5	0.7	-0.0	-0.0	1.8	-0.0	1.8	-0.0	-0.0	-0.0	-0.0
49	WHSLE&RET	4.4	10.5	7.3	2.1	0.3	3.5	0.5	3.5	0.5	0.8	4.9	8.0	8.0
50	FINANCE	0.6	2.9	2.0	1.1	0.1	1.9	1.2	1.9	1.2	0.2	1.6	0.7	0.7
51	INSURANCE	1.0	3.5	2.2	1.6	0.1	2.6	2.7	2.6	2.7	0.4	1.4	0.9	0.9
52	REAL ESTATE	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
53	BUSI SERV	0.5	1.6	1.2	2.1	0.1	1.9	2.3	1.9	2.3	0.4	0.8	1.4	1.4
54	PERS SERV	0.6	2.3	1.3	7.8	0.1	2.6	5.3	2.6	5.3	0.4	1.0	0.6	0.6
55	SUBTOTALS	68.1	126.2	109.5	47.8	4.2	61.5	39.2	61.5	39.2	10.3	97.3	26.3	26.3
56	VAL ADD	51.2	281.2	139.7	130.2	33.7	121.8	113.5	121.8	113.5	25.3	69.5	85.7	85.7
57	IMPORTS	16.9	94.3	79.2	38.9	4.9	168.8	319.3	168.8	319.3	6.6	21.4	19.6	19.6
58	TOTAL	126.2	501.7	328.4	216.9	42.8	352.1	472.0	352.1	472.0	42.2	188.2	131.6	131.6

TABLE C-28. - WASHINGTON 1980 GROSS FLOWS (Cont.)

	31	32	33	34	35	36	37	38	39	40
	NONFER MET	ALUMINUM	HEAVY METL	LITE METL	NONELC EQP	MACH TOOL	NONELC EQP	ELEC MACH	AEROSPACE	MOTOR VEH
1	FIELD CROP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	VEGETABLES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	LIVESTOCK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	OTHER AGRI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	FISHING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MEAT PRODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	DAIRY PRODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	CANNIPRES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	GRAIN MILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	BEVERAGES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	OTHER FOODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	TEXTILES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
13	APPAREL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	MINING	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	FORESTRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	LOGGING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	SAWMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2
18	PLYWOOD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.4
19	OTHER WOOD	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.0
20	FURNIFIX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2
21	PULPMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	PAPER MILLS	0.0	0.0	0.2	0.0	0.0	0.0	0.2	1.0	0.0
23	PAPER MILLS	0.0	0.0	0.0	1.1	0.0	0.2	0.6	1.5	0.2
24	PRINT&PUBS	0.0	0.0	0.0	0.0	0.0	0.2	0.0	10.4	0.0
25	INDUS&CHEM	0.0	0.1	0.0	0.0	0.1	0.0	0.0	1.2	0.0
26	OTHER CHEM	0.1	0.0	1.5	0.4	0.0	0.0	0.1	2.3	0.4
27	PET REFIN	1.2	0.4	0.5	0.2	0.2	0.0	0.0	3.8	0.2
28	GLASS&STONE	0.0	0.0	0.2	0.2	0.2	0.0	0.2	0.8	0.2
29	CEM&CLAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0
30	IRON&STEEL	0.0	0.1	22.9	1.5	5.0	1.3	0.4	0.3	10.1
31	NONFER MET	20.1	0.0	0.1	1.0	0.6	0.5	1.0	1.2	0.6
32	ALUMINUM	0.0	0.4	1.4	0.4	0.4	0.2	0.2	7.3	3.4
33	HEAVY METL	0.0	0.0	4.1	0.5	0.5	0.0	0.0	0.0	2.2
34	LITE METL	0.1	0.0	0.2	5.5	1.4	0.3	0.5	3.8	2.4
35	NONELC EQP	0.0	0.0	0.0	0.0	0.6	0.8	0.0	0.0	0.0
36	MACH TOOL	0.0	0.0	0.5	0.4	3.1	1.8	0.4	27.9	0.0
37	NONELC EQP	0.0	0.0	0.0	0.0	0.9	0.5	0.5	0.4	0.0
38	ELEC MACH	0.0	0.0	0.5	0.0	0.5	0.3	0.8	14.5	0.5
39	AEROSPACE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5	0.0
40	MOTOR VEH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
41	SHIP BLDG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	OTHER MFGS	0.0	0.0	0.0	0.0	0.0	0.3	0.3	8.0	0.2
43	TRANSPORT	0.0	0.4	0.7	0.7	0.4	0.0	0.2	4.7	0.6
44	ELEC COMPY	0.9	1.5	1.5	1.1	0.4	0.7	0.6	9.1	0.2
45	GAS COMPY	1.7	0.1	0.0	0.7	0.0	0.0	0.2	3.6	0.0
46	WATER SERV	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.4	0.0
47	COMMUNICAT	0.2	0.0	0.4	0.4	0.2	0.3	0.4	21.8	0.4
48	CONSTR	-0.0	-0.0	-0.0	-0.0	0.2	0.3	0.2	7.7	0.6
49	WHOLESALE	1.0	0.2	2.4	0.7	1.7	1.2	2.1	9.8	0.8
50	FINANCE	0.2	0.1	0.9	0.7	0.2	0.3	0.4	3.6	0.6
51	INSURANCE	0.5	0.2	1.1	1.0	0.7	0.5	1.0	9.5	1.2
52	REAL ESTATE	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.2	-0.0	-0.0
53	FOOD SERV	0.3	0.1	1.1	0.9	0.2	0.3	1.4	18.1	2.4
54	PERSONAL SERV	0.3	0.1	0.5	0.5	0.3	0.6	0.4	3.6	0.4
55	SUBTOTALS	28.2	3.7	47.7	17.9	17.9	17.4	8.7	235.3	29.4
56	VAL ADD	17.8	11.7	33.4	43.2	57.2	37.7	46.1	1846.2	121.1
57	IMPORTS	36.4	15.7	36.0	68.1	32.2	28.6	42.1	2315.3	33.7
58	TOTAL	42.4	31.1	150.1	129.2	107.3	76.7	96.9	4396.8	184.2

	41	42	43	44	45	46	47	48	49	50						
	SHIP	BLDG	OTHER	MFGS	TRANSPORT	FLEC	CCMPY	GAS	CCMPY	WATER	SERV	COMMUNICAT	CONSTR	WHSLES	RETR	FINANCE
1	FIELD CRIP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	VEGETABLES	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	LVSTK&PRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	OTHER AGRI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
5	FISHING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MEAT PRD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	DAIRY PRD	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	CANN&PRES	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	GRAIN MLLS	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	BEVERAGES	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	OTHER FOODS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
12	TEXTILES	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	APPAREL	0.1	0.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0
14	MINING	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.7	0.0	0.0	0.0
15	FORESTRY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	LOGGING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	SAWMILLS	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.1	0.0	0.0	0.0
18	PLYWOOD	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0
19	OTHER WOOD	0.3	0.2	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.6	1.6	0.0	0.0
20	FURN&FIX	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
21	PULPMILLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	PAPER MLLS	0.1	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	7.5	0.0	0.0
23	PAPER MILS	0.2	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.2	0.0
24	PRINT&PUBS	0.2	0.0	1.3	1.5	0.0	0.4	0.2	1.1	1.7	0.0	0.0	0.0	68.5	9.8	0.0
25	INDUS&CHEM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	OTHER CHEM	1.2	0.3	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0
27	PET REFIN	0.1	0.0	47.7	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.3	22.4	0.7	0.0
28	GLASS&STONE	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.4	0.0	0.0
29	CEM&CLAY	0.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	135.0	0.0	0.0	0.0	0.0
30	IRON&STEEL	4.8	0.2	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0	0.0
31	NONFER MET	0.5	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0
32	ALUMINUM	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0
33	HEAVY METL	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	59.6	0.8	0.0	0.0
34	LITE METL	1.4	2.1	1.7	0.8	0.0	0.7	0.0	0.0	0.0	0.0	0.0	10.5	0.5	0.0	0.0
35	NONELC EQP	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
36	MACH TOOL	0.6	0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0
37	NONELC EQP	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
38	ELEC MACH	1.6	0.4	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.0
39	AEROSPACE	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	MOTOR VEH	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
41	SHIP BLDG	0.3	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0
42	OTHER MFGS	0.6	4.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.1	0.2	0.0
43	TRANSPORT	1.1	0.4	4.1	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.7	33.6	3.5	0.0
44	ELEC CCMPY	0.6	0.8	3.8	72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	47.1	2.0	0.0
45	GAS CCMPY	0.2	0.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.5	0.0
46	WATER SERV	0.2	0.0	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	7.6	0.4	0.0
47	COMMUNICAT	0.5	0.4	8.3	1.3	0.5	0.2	2.6	8.8	66.9	7.4	0.0	0.0	0.0	0.0	0.0
48	CONSTR	0.1	-0.0	22.3	9.9	1.5	1.9	6.6	2.4	24.3	3.3	0.0	0.0	0.0	0.0	0.0
49	WHSLES&RETR	2.9	0.6	15.1	3.9	-0.0	1.6	92.7	42.8	3.9	0.0	0.0	0.0	0.0	0.0	0.0
50	FINANCE	0.5	0.6	2.9	1.1	0.4	0.4	0.8	8.6	30.5	21.6	0.0	0.0	0.0	0.0	0.0
51	INSURANCE	1.6	0.6	8.1	3.4	0.7	0.8	2.5	13.2	18.2	1.9	0.0	0.0	0.0	0.0	0.0
52	REAL ESTATE	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
53	BUSI SERV	3.4	1.7	9.7	7.4	1.3	0.6	3.4	52.6	40.2	9.6	0.0	0.0	0.0	0.0	0.0
54	PERS SERV	0.6	0.4	19.0	1.9	0.4	0.4	1.3	6.9	36.8	4.4	0.0	0.0	0.0	0.0	0.0
55	SUBTOTALS	26.0	17.3	156.7	112.6	5.9	10.3	26.2	684.6	519.1	73.6	0.0	0.0	0.0	0.0	0.0
56	VAL ADJ	64.1	64.3	453.5	212.1	53.8	31.6	250.6	924.8	2407.2	357.2	0.0	0.0	0.0	0.0	0.0
57	IMPORTS	157.6	13.9	314.9	172.5	41.2	60.4	79.5	640.0	50.3	8.1	0.0	0.0	0.0	0.0	0.0
58	TOTAL	248.3	95.5	935.1	497.2	100.9	102.3	356.3	2249.4	2976.6	438.9	0.0	0.0	0.0	0.0	0.0

TABLE C-28. - WASHINGTON 1980 GROSS FLOWS (Cont.)

	51	52	53	54	55	56	57	58	59
	INSURANCE	REA ESTATE	BUSI SERV	PERS SERV	SUBTOTLS	CONSUMP	G \$ I	FED	DF-EXP
									TOTAL
1	FIELD CRIP	0.0	0.0	0.0	98.5	3.0	0.0	309.2	410.7
2	VEGETABLES	0.0	0.0	0.0	76.6	24.3	0.0	69.1	170.0
3	LVSTKSPROD	0.0	0.0	0.0	305.7	51.4	0.0	8.6	365.7
4	CTHR AGRI	0.0	0.0	0.2	6.6	3.6	0.2	35.9	46.3
5	FISHING	0.0	0.0	0.0	16.5	2.5	0.0	17.4	36.4
6	MEAT PRDUS	0.0	0.0	0.9	18.4	216.3	10.4	115.4	360.5
7	DAIRY PRD	0.0	0.0	0.9	44.0	173.3	13.2	48.2	278.7
8	CANN\$PRES	0.0	0.0	1.7	10.0	47.6	4.6	296.4	358.6
9	GRAIN MLLS	0.0	0.0	0.9	81.6	19.6	0.0	76.7	177.9
10	BEVERAGES	0.0	0.0	0.0	19.1	91.9	0.0	177.7	288.7
11	CTHR FOODS	0.0	0.0	4.1	31.3	168.0	7.0	72.3	278.6
12	TEXTILES	0.0	0.0	0.0	3.7	2.6	2.6	13.1	22.0
13	APPAREL	0.0	0.0	0.2	12.5	41.2	0.5	68.7	122.9
14	MINING	0.0	0.0	0.2	75.1	0.4	5.8	19.8	101.1
15	FLRESTRY	0.0	0.0	0.0	114.7	0.9	0.0	7.6	123.2
16	LOGGING	0.0	0.0	0.0	197.8	-0.0	0.0	130.9	328.7
17	SAWMILLS	0.0	0.0	0.2	148.9	2.3	0.9	171.1	323.2
18	PLYWOOD	0.0	0.0	0.2	36.0	2.1	4.2	208.0	250.3
19	CTHR WOOD	0.0	0.0	0.0	59.1	2.7	6.3	72.3	140.4
20	FURN\$FIX	0.0	0.0	0.0	4.6	13.7	14.4	50.3	83.0
21	PULPMILLS	0.0	0.0	0.0	51.3	-0.0	0.0	84.9	136.2
22	PAPER MLLS	0.2	0.0	0.6	43.2	17.4	13.0	428.1	501.7
23	PAPBD MILS	0.2	0.0	0.2	113.7	2.3	2.1	210.3	328.4
24	PRINT\$PUBS	6.6	11.4	6.4	149.6	57.1	2.8	7.4	216.9
25	INDUSSCHEM	0.0	0.0	0.0	42.3	-0.0	0.5	-0.0	42.8
26	CTHR CHEM	0.0	0.2	0.0	65.1	10.1	2.5	274.4	352.1
27	PET REFIN	0.0	3.7	0.6	166.6	127.0	35.9	142.5	472.0
28	GLASS\$STONE	0.0	0.0	0.0	25.3	3.0	0.1	13.8	42.2
29	CEN\$CLAY	0.0	0.0	0.0	164.1	11.6	5.6	6.9	188.2
30	IRON\$STEEL	0.0	0.0	0.0	77.5	-0.0	5.8	48.3	131.6
31	NONFER MET	0.0	0.0	0.0	31.3	-0.0	0.0	51.1	82.4
32	ALUMINUM	0.0	0.0	0.0	24.0	0.4	4.9	1.8	31.1
33	HEAVY METL	0.0	0.0	0.6	72.0	2.2	12.3	73.6	160.1
34	LITE METL	0.0	0.0	4.0	91.7	2.9	7.0	27.6	129.2
35	ACNELC ECP	0.0	0.0	0.0	3.2	5.6	45.5	53.0	107.3
36	MACH TOOL	0.0	0.0	1.0	48.7	-0.0	5.8	22.2	76.7
37	ACNELC ECP	0.0	0.0	0.0	8.7	-0.0	19.5	110.3	138.5
38	ELEC MACH	0.0	0.0	0.0	27.3	5.7	3.2	60.7	96.9
39	AEROSPACE	0.0	0.0	0.0	55.9	-0.0	0.9	4340.0	4396.8
40	MOTOR VEH	0.0	0.0	0.0	5.4	3.2	0.9	174.7	184.2
41	SHIP BLDG	0.0	0.0	0.0	2.1	16.9	4.9	224.4	248.3
42	CTHR MFGS	0.0	0.0	0.4	20.7	8.5	12.3	54.0	95.5
43	TRANSPORT	3.6	1.6	1.5	271.0	176.6	37.3	450.2	935.1
44	ELEC COMPY	0.2	6.1	0.7	207.9	200.2	33.9	55.2	497.2
45	GAS COMPY	1.1	2.7	0.6	48.5	36.3	3.5	12.6	100.9
46	WATER SERV	1.1	3.9	0.7	36.9	65.2	0.0	0.2	102.3
47	COMMUNICAT	4.0	1.8	6.7	183.9	124.7	22.7	25.0	356.3
48	CONSTR	0.9	16.1	0.9	152.8	93.0	1971.8	31.8	2249.4
49	WH\$LES\$RFT	4.0	3.9	4.5	399.0	2441.9	60.8	74.9	2976.6
50	FINANCE	2.9	2.0	2.3	120.6	272.9	19.0	26.4	438.9
51	INSURANCE	22.4	3.2	2.8	146.4	252.6	16.0	77.4	492.4
52	REA ESTATE	6.2	11.2	4.3	103.2	108.5	8.6	4.1	224.4
53	BUSI SERV	10.0	9.1	21.3	285.1	56.0	28.5	24.9	394.5
54	PERS SERV	1.5	2.3	4.6	171.8	1063.7	10.5	106.5	1352.5
55	SUBTOTLS	64.9	75.2	58.9	4777.5	6032.9	2468.2	9267.9	22546.5
56	VAL ALC	418.8	143.4	301.7	11812.2	1483.1	1384.1	-0.0	14679.4
57	IMPORTS	8.7	1.8	33.9	5556.8	2887.8	819.6	-0.0	9664.2
58	TOTAL	492.4	224.4	354.5	1352.5	22546.5	14003.4	9267.9	46890.1

NOT
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	FIELD CROP	VEGETABLES	LVSTK PRODS	OTHER AGRI	FISHING	MEAT PRODS	DAIRY PROD	CANNSPRES	GRAIN MLLS	BEVERAGES
1	FIELD CROP	0.136523	0.000000	0.026053	0.000000	0.000000	0.000000	0.000000	0.090334	0.008035
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.435294	0.000000	0.008824
3	LVSTK PRODS	0.000000	0.000000	0.070003	0.000000	0.000000	0.425212	0.330599	0.000000	0.000000
4	OTHER AGRI	0.000000	0.023758	0.000000	0.066479	0.000000	0.000000	0.000000	0.012959	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.005495	0.000000	0.000000	0.447802	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000000	0.000000	0.000832	0.033842	0.000000	0.000000	0.000000
7	DAIRY PRODS	0.000000	0.000000	0.003947	0.000000	0.000718	0.001435	0.000359	0.000000	0.000000
8	CANNSPRES	0.000000	0.000000	0.000000	0.000000	0.000837	0.000000	0.000000	0.011433	0.001952
9	GRAIN MLLS	0.000000	0.000000	0.273749	0.000000	0.001124	0.001034	0.000000	0.007307	0.024171
10	BEVERAGES	0.000000	0.000000	0.006581	0.000000	0.000693	0.000000	0.000693	0.000000	0.053343
11	OTHER FOODS	0.000000	0.000000	0.003948	0.000000	0.001077	0.003589	0.007538	0.002408	0.005025
12	TEXTILES	0.000000	0.000000	0.000000	0.000000	0.040909	0.000000	0.000000	0.000000	0.022727
13	APPAREL	0.000000	0.000814	0.000000	0.000000	0.001627	0.000000	0.000000	0.000000	0.018714
14	MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHER WOOD	0.000000	0.000547	0.000000	0.000000	0.002137	0.000000	0.000712	0.000000	0.007123
20	FURNITURE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000000	0.002392	0.000000	0.000000	0.000000	0.000000	0.000000	0.000399	0.000000
23	PAPER MILLS	0.000000	0.002706	0.000609	0.002741	0.000000	0.010049	0.013703	0.032887	0.010658
24	PRINTING	0.000000	0.000461	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.014292
25	INDUSCHEM	0.000000	0.004673	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
26	OTHER CHEM	0.013917	0.013917	0.000000	0.000000	0.000000	0.000000	0.000000	0.000284	0.000568
27	PET REFIN	0.025212	0.003602	0.011441	0.001271	0.002966	0.000000	0.001907	0.000847	0.000424
28	GLASS/STONE	0.004739	0.000000	0.000000	0.004739	0.000000	0.000000	0.026066	0.054502	0.000000
29	CEMENT/CLAY	0.002657	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
30	IRON/STEEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
31	NONFER MET	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
32	ALUMINUM	0.073955	0.019293	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
33	HEAVY METL	0.000000	0.000000	0.000000	0.000000	0.000000	0.001249	0.000000	0.000000	0.002498
34	LITE METL	0.000000	0.000000	0.000000	0.000000	0.000000	0.014706	0.000000	0.019195	0.000000
35	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001304	0.000000	0.000000
37	NONELC ELP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004332	0.000000	0.001444
38	ELEC MACH	0.000000	0.000000	0.000000	0.000000	0.002064	0.000000	0.000000	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.004343	0.000543	0.002714	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.002416	0.000000	0.000000	0.000000	0.000000
42	OTHER MFGS	0.000000	0.000000	0.000000	0.000000	0.002094	0.000000	0.000000	0.000000	0.000000
43	TRANSPORT	0.002139	0.000749	0.002730	0.000321	0.000862	0.008127	0.013047	0.002994	0.010373
44	ELEC COMPY	0.000855	0.001609	0.003419	0.000402	0.000000	0.001207	0.001609	0.002816	0.001609
45	GAS COMPY	0.000000	0.000000	0.000000	0.000000	0.000000	0.012884	0.012884	0.017839	0.006938
46	WATER SERV	0.011730	0.007820	0.000000	0.000000	0.000000	0.007820	0.003910	0.017595	0.000000
47	COMMUNICAT	0.005613	0.003929	0.005333	0.003368	0.000561	0.003087	0.001684	0.002807	0.000561
48	CONSTR	0.003557	0.001022	0.002490	0.000311	-0.000000	0.000489	0.000445	0.000489	0.000356
49	WHOLESALE	0.002419	0.000470	0.002620	0.000235	0.000302	0.002620	0.002856	0.004099	0.000806
50	FINANCE	0.005240	0.002278	0.002051	0.001595	0.000456	0.002506	0.001367	0.006152	0.002278
51	INSURANCE	0.005686	0.002234	0.005977	0.000609	0.000609	0.001828	0.001828	0.004874	0.002031
52	REAL ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000
53	PLSI SERV	0.002737	0.003042	0.002028	0.000253	0.003295	0.008872	0.010393	0.011407	0.006591
54	PERS SERV	0.001479	0.000665	0.001257	0.000222	-0.000000	0.000739	0.001035	0.001635	0.000444
55	VAL ADJ	0.015076	0.000992	0.003345	0.002119	0.001662	0.004781	0.004891	0.008611	0.001730
56	IMPORTS	0.011413	0.000869	0.012555	0.000776	0.000341	0.009489	0.001024	0.004812	0.008878

NOT REPRODUCIBLE

TABLE C-29. - WASHINGTON 1980 SALES COEFFICIENTS (Cont.)

	11	12	13	14	15	16	17	18	19	20
	OTHER FOODS	TEXTILES	APPAREL	MINING	FORESTRY	LOGGING	SAWMILLS	PLYWOOD	OTHER WOOD	FURN&FIX
1	FIELD CROP	0.078890	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.076471	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LVSTK&PRD	0.006750	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.021598	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.006817	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANN&PRES	0.074183	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MLLS	0.075115	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.073464	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	ETHR FOODS	0.036612	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.000000	0.045455	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000000	0.045634	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.006924	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHER WOOD	0.001425	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	FURN&FIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.001595	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	PAPBD MILS	0.029842	0.000000	0.001827	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	PRINT&PUBS	0.020286	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	INDUS&CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
26	OTHER CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
27	PET REFINE	0.003178	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
28	GLAS&STONE	0.023436	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
29	CEM&CLAY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
30	IRON&STEEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
31	NONFER MET	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
32	ALUMINUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
33	HEAVY METL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
34	LITE METL	0.001548	0.000000	0.001548	0.001548	0.000000	0.000000	0.000000	0.000000	0.000000
35	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
37	NONELC EQP	0.001444	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
38	ELEC MACH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
42	OTHER MFGS	0.001047	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
43	TRANSPORT	0.005945	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
44	ELEC CUMPY	0.000805	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
45	GAS CUMPY	0.016848	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
46	WATER SERV	0.007820	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
47	COMMUNICAT	0.004491	0.000561	0.000123	0.000561	0.000842	0.000364	0.000287	0.000561	0.000123
48	CONSTR	0.000178	0.000000	0.000000	0.000000	0.000000	0.000133	0.000000	0.000000	0.000000
49	WHLS&RET	0.002755	0.000000	0.000000	0.000000	0.000000	0.000329	0.000435	0.000208	0.000147
50	FINANCE	0.002734	0.000456	0.000000	0.000136	0.000251	0.000182	0.000182	0.000136	0.000456
51	INSURANCE	0.003249	0.000496	0.000162	0.000231	0.000243	0.000231	0.000231	0.000231	0.000231
52	REAL ESTATE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
53	RUST SERV	0.012674	0.000000	0.000253	0.000142	0.000760	0.000253	0.000861	0.000608	0.000597
54	FEES SERV	0.000887	0.000000	0.000444	0.000444	0.000000	0.000961	0.000961	0.000591	0.000444
55	VAL ADD	0.009122	0.000572	0.000376	0.000376	0.000782	0.000519	0.000973	0.000687	0.000281
56	IMPORTS	0.002473	0.000149	0.000557	0.000303	0.000248	0.000248	0.000198	0.000418	0.000180

NOT REPRODUCIBLE

	21	22	23	24	25	26	27	28	29	30
	PULPMILLS	PAPER MILLS	PAPRD MILS	PRINTSPUBS	INDUS\$CHEM	OTHER CHEM	PET REFIN	GLASS&STONE	CEM&CLAY	IRON&STEEL
1	FIELD CRP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LSTK&PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.000000	0.000000	0.012959	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANN&PRES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	OTHR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.000000	0.018132	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.000000	0.010880	0.000000	0.000000	0.000989	0.000000	0.007913	0.346192	0.005935
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.051265	0.033967	0.021904	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.019453	0.029084	0.006807	0.000000	0.000000	0.000000	0.000000	0.000619	0.000000
18	PLYWOOD	0.003196	0.012785	0.003196	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHR WOOD	0.000712	0.000712	0.000712	0.000000	0.000000	0.000000	0.001425	0.000000	0.001425
20	FURN&FIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.011747	0.096916	0.267988	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MILLS	0.000199	0.000598	0.018338	0.036077	0.000000	0.001196	0.000399	0.000399	0.000797
23	PAPRD MILS	0.000000	0.021011	0.056334	0.000609	0.000000	0.014312	0.000609	0.009440	0.013398
24	PRINT&PUBS	0.000000	0.000461	0.000461	0.024435	0.000000	0.005994	0.000922	0.003688	0.000922
25	INDUS\$CHEM	0.177570	0.093458	0.028037	0.000000	0.000000	0.448598	0.053738	0.000000	0.000000
26	OTHR CHEM	0.001988	0.007668	0.003976	0.009940	0.001136	0.028117	0.000568	0.002272	0.000568
27	PET REFIN	0.003390	0.010169	0.006144	0.000000	0.000000	0.005508	0.008686	0.014831	0.000212
28	GLASS&STONE	0.000000	0.000000	0.000000	0.000000	0.000000	0.014218	0.000000	0.000000	0.040284
29	CEM&CLAY	0.011690	0.001594	0.000000	0.000000	0.000000	0.000000	0.001763	0.107564	0.004782
30	IRON&STEEL	0.000760	0.000760	0.000760	0.000000	0.000000	0.000000	0.000000	0.008359	0.018237
31	NONFER MET	0.001214	0.000000	0.000000	0.000000	0.000000	0.023058	0.000000	0.002427	0.004854
32	ALUMINUM	0.000000	0.000000	0.000000	0.000000	0.006431	0.000000	0.000000	0.000000	0.000000
33	HEAVY METL	0.001249	0.000625	0.000000	0.000000	0.000000	0.000000	0.001249	0.000000	0.000000
34	LITE METL	0.001548	0.003870	0.001548	0.003096	0.000000	0.004644	0.000000	0.006192	0.001548
35	NONELC ELP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001864	0.000000
36	MACH TOOL	0.001304	0.000000	0.000000	0.000000	0.000000	0.024772	0.000000	0.018253	0.002608
37	NONELC ELP	0.003510	0.009386	0.002888	0.000000	0.000722	0.000000	0.000000	0.000000	0.000000
38	ELEC MACH	0.001032	0.001032	0.000000	0.000000	0.000000	0.000000	0.005160	0.000000	0.006192
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.000000	0.001086	0.000000	0.002172	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.000000	0.000805	0.000000	0.000000	0.000000
42	OTHR MFGS	0.001047	0.001047	0.003141	0.002094	0.001047	0.013613	0.001047	0.000700	0.000000
43	TRANSPORT	0.004558	0.010694	0.007058	0.001497	0.000642	0.002780	0.011443	0.000856	0.011870
44	ELEC COMPY	0.002414	0.013878	0.006034	0.001810	0.003419	0.001207	0.005229	0.001207	0.004626
45	GAS COMPY	0.015857	0.098117	0.030723	0.003964	0.000000	0.003964	0.005946	0.008920	0.012884
46	WATER SERV	0.007820	0.006843	0.002933	0.000000	0.000000	0.004888	0.000000	0.001955	0.000000
47	COMMUNICAT	0.000561	0.003087	0.001403	0.005613	0.000281	0.001684	0.000561	0.002245	0.001684
48	CONSTR	0.000222	0.000400	0.000222	0.000311	-0.000000	-0.000000	0.000000	-0.000000	0.000311
49	WHS&RENT	0.001478	0.003528	0.002452	0.000706	0.000101	0.001176	0.000168	0.000269	0.001646
50	FINANCE	0.001367	0.006607	0.004557	0.002506	0.000228	0.004329	0.002734	0.000456	0.003645
51	INSURANCE	0.002031	0.007108	0.004468	0.003249	0.000203	0.005280	0.005483	0.000812	0.001828
52	REAL ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000891
53	BUSI SERV	0.001267	0.004056	0.003042	0.005323	0.000253	0.004816	0.005830	0.001014	0.002028
54	PERS SERV	0.000444	0.001701	0.000961	0.005767	0.000074	0.001922	0.003919	0.000296	0.000739
55	VAL ADJ	0.003488	0.019156	0.009517	0.008670	0.002296	0.008297	0.007722	0.001724	0.005838
56	IMPORTS	0.001749	0.009758	0.003195	0.004025	0.000507	0.017467	0.033039	0.000683	0.002028

TABLE C-29. - WASHINGTON 1980 SALES COEFFICIENTS (Cont.)

	21	32	33	34	35	36	37	38	39	40
	NONFER MET	ALUMINUM	HEAVY METL	LITE METL	NONFERL FQP	MACH TOOL	NONFERL EQP	ELEC MACH	AEROSPACE	MOTOR VEH
1	FIELD CROP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LYSTKSPROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	CTHR AGRI	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PKDUS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANNSPRES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MLLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	CTHR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.018182	0.000000
13	APPAREL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.015826	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001238	0.000619
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004395	0.001598
19	CTHR WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.001425	0.000000	0.002849	0.000000
20	FURN&FIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.006024	0.002410
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001993	0.000000
23	PAPBD MILS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000609	0.001827	0.004568	0.000609
24	PRINT&PUBS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000922	0.000000	0.047948	0.000000
25	INDUS\$CHEM	0.000000	0.002336	0.000000	0.000000	0.000000	0.000000	0.000000	0.028037	0.000000
26	CTHR CHEM	0.000284	0.000000	0.004260	0.001136	0.000000	0.000000	0.000000	0.000284	0.001136
27	PET REFINE	0.002542	0.000847	0.001059	0.000424	0.000000	0.000000	0.000000	0.008051	0.000424
28	GLASS&STONE	0.000000	0.000000	0.004739	0.004739	0.007109	0.000000	0.000000	0.004739	0.004739
29	CEM&CLAY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.003719	0.000000
30	IRON&STEEL	0.000000	0.000760	0.174512	0.011398	0.037994	0.009878	0.003040	0.002280	0.076748
31	NONFER MET	0.243932	0.000000	0.001214	0.012136	0.007282	0.006068	0.000000	0.014563	0.007282
32	ALUMINUM	0.000000	0.012862	0.045016	0.012862	0.012862	0.006431	0.006431	0.032154	0.109325
33	HEAVY METL	0.000000	0.000000	0.025609	0.003123	0.003123	0.000000	0.000000	0.000000	0.013741
34	LITE METL	0.000774	0.000000	0.001548	0.042570	0.010836	0.002322	0.003870	0.001548	0.029412
35	NONFERL EQP	0.000000	0.000000	0.000000	0.000000	0.005592	0.000000	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.005215	0.005215	0.040417	0.023468	0.005215	0.002608	0.363755
37	NONFERL EQP	0.000000	0.000000	0.000000	0.000000	0.006498	0.003610	0.003610	0.000000	0.000000
38	ELEC MACH	0.000000	0.000000	0.005160	0.000000	0.005160	0.003096	0.008256	0.005160	0.149639
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.012395	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.005429
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
42	CTHR MFCS	0.000000	0.000000	0.000000	0.000000	0.000000	0.003141	0.003141	0.000000	0.002094
43	TRANSPORT	0.000000	0.000428	0.000749	0.000749	0.000428	0.000000	0.000428	0.000214	0.005026
44	ELEC COMPY	0.001810	0.003017	0.003017	0.002212	0.000805	0.001408	0.001207	0.000805	0.000402
45	GAS COMPY	0.016846	0.000491	0.000000	0.006938	0.000000	0.000000	0.001982	0.001982	0.035679
46	WATER SERV	0.000000	0.000000	0.000000	0.000000	0.000000	0.001955	0.000000	0.000000	0.000000
47	COMMUNICAT	0.000561	-0.000000	0.001123	0.001123	0.000561	0.000842	0.001123	0.001123	0.061184
48	CONSTR	-0.000000	-0.000000	-0.000000	-0.000000	0.000089	0.000133	-0.000089	0.003423	0.000267
49	WHSE&RENT	0.000336	0.000067	0.000806	0.000235	0.000571	0.000403	0.000370	0.003292	0.000269
50	FINANCE	0.000456	0.000228	0.002051	0.001595	0.000456	0.000684	0.000911	0.000456	0.001367
51	INSURANCE	0.001015	0.000406	0.002234	0.002031	0.001422	0.001015	0.002031	0.001219	0.002437
52	REA ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.000891	-0.000000
53	BLST SERV	0.000760	0.000253	0.002788	0.002281	0.000507	0.000760	0.003549	0.001521	0.006034
54	PERS SERV	0.000222	0.000074	0.000370	0.000370	0.000296	0.000222	0.000444	0.000296	0.000296
55	VAL AGC	0.001213	0.000797	0.005631	0.002943	0.003897	0.002568	0.007269	0.003140	0.008250
56	IMPORTS	0.003766	0.001625	0.003725	0.007047	0.003332	0.002959	0.002152	0.004356	0.003487

NOT REPRODUCIBLE

		41	42	43	44	45	46	47	48	49	50
		SHIP BLDG	OTHER MFGS	TRANSPORT	ELEC COMPY	GAS COMPY	WATER SERV	COMMUNICAT	CONSTR	WHSLES/RET	FINANCE
1	FIELD CRP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LVSTK/PROL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.002497	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PRODS	0.000000	0.000000	0.000718	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANN/SPRFS	0.000000	0.000000	0.004741	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MILLS	0.000000	0.000000	0.001124	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.000000	0.000000	0.001386	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	OTHR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.004545	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000814	0.004882	0.003255	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.000000	0.000000	0.012359	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000928	0.001238	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	PLYWOOD	0.001598	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHR WOOD	0.002137	0.001425	0.003490	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	FURN/FIX	0.001205	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MILLS	0.000199	0.000797	0.000000	0.000598	0.000000	0.000000	0.001993	0.000000	0.004949	0.000000
23	PAPER MILLS	0.000609	0.001218	0.003350	0.000000	0.000000	0.000000	0.000000	0.000000	0.046894	0.000609
24	PRINT/PUBS	0.000922	0.000000	0.005994	0.000616	0.001844	0.000922	0.005071	0.007838	0.015814	0.045182
25	INDUS/CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.112150	0.000000	0.000000	0.000000	0.000000
26	OTHR CHEM	0.003408	0.000852	0.007668	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
27	PET REFIN	0.000212	0.000000	0.001059	0.003390	0.000000	0.000000	0.001907	0.000000	0.047458	0.001483
28	GLASS/STONE	0.002370	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
29	CEM/CLAY	0.002657	0.000000	0.002125	0.000000	0.000000	0.000000	0.001063	0.000000	0.000000	0.000000
30	IRON/STEEL	0.006474	0.001520	0.008359	0.001520	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
31	NONFER MET	0.006068	0.000000	0.001214	0.003641	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
32	ALUMINUM	0.000000	0.054662	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
33	HEAVY METL	0.003748	0.000000	0.000000	0.000000	0.000000	0.001249	0.001249	0.000000	0.004997	0.000000
34	LITE METL	0.000336	0.0016254	0.0013158	0.006192	0.005418	0.000000	0.000000	0.000000	0.0081269	0.000000
35	NONELC EQP	0.005562	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
36	MACH TOOL	0.007823	0.002608	0.009126	0.000000	0.000000	0.000000	0.000000	0.000000	0.0084746	0.000000
37	NONELC EQP	0.002166	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
38	ELEC MACH	0.0016512	0.004128	0.006192	0.005160	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.004886	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.001208	0.000000	0.004027	0.000000	0.000000	0.000000	0.000000	-0.000000	-0.000000	0.000000
42	OTHER MFGS	0.006283	0.008168	0.002094	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
43	TRANSPORT	0.001176	0.000428	0.004385	0.006630	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
44	ELEC COMPY	0.001207	0.001609	0.007643	0.144811	0.000000	0.001609	0.004224	0.002212	0.004730	0.004023
45	GAS COMPY	0.001982	0.001982	0.016848	0.000000	0.000000	0.000000	0.000000	0.000000	0.005411	0.004955
46	WATER SERV	0.001955	0.000000	0.007820	0.002933	0.000000	0.000000	0.000000	0.005865	0.074291	0.003910
47	COMMUNICAT	0.001403	0.001123	0.023295	0.003649	0.001403	0.000561	0.007297	0.024698	0.187763	0.020769
48	CONSTR	0.000044	-0.000000	0.000914	0.004401	0.000667	0.000845	0.002934	0.001067	0.010803	0.001467
49	WHSLES/RET	0.000074	0.000202	0.000073	0.001310	-0.000000	-0.000000	0.000538	0.001143	0.014379	0.001310
50	FINANCE	0.001139	0.001367	0.006607	0.002506	0.000911	0.000911	0.001823	0.019594	0.069492	0.049214
51	INSURANCE	0.003245	0.001219	0.016450	0.006905	0.001422	0.001625	0.005077	0.026807	0.036962	0.003859
52	REAL ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.002228	-0.000000	0.000000	0.000000
53	BUSI SERV	0.000619	0.004309	0.024568	0.018758	0.003295	0.001521	0.008619	0.133333	0.101901	0.024335
54	PERI SERV	0.000444	0.000296	0.014048	0.001405	0.000296	0.000296	0.000961	0.005102	0.027209	0.003253
55	VAL ADD	0.004367	0.004380	0.002894	0.014449	0.003665	0.002153	0.017072	0.063000	0.163985	0.024333
56	IMPORTS	0.001630	0.001438	0.002594	0.017849	0.004263	0.006250	0.008226	0.066224	0.005205	0.000838

NOT REPRODUCIBLE

TABLE C-29. - WASHINGTON 1980 SALES COEFFICIENTS (Cont.)

		51	52	53	54	55	56	57
		INSURANCE	REA ESTATE	BUSI SERV	PERS SERV	CONSUMP	G&I	FED DF-EXP
1	FIELD CROP	0.000000	0.000000	0.000000	0.000000	0.007305	0.000000	0.752861
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.142941	0.000000	0.406471
3	LIVESTOCK	0.000000	0.000000	0.000000	0.001094	0.140552	0.000000	0.023517
4	OTHER AGRI	0.000000	0.000000	0.000000	0.004320	0.077754	0.004320	0.775379
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.068681	0.000000	0.478022
6	MEAT PRODS	0.000000	0.000000	0.000000	0.002497	0.600000	0.028849	0.320111
7	DAIRY PROD	0.000000	0.000000	0.000000	0.003229	0.621816	0.047363	0.172946
8	CANNED PKES	0.000000	0.000000	0.000000	0.004741	0.132738	0.012828	0.826548
9	GRAIN MILLS	0.000000	0.000000	0.000000	0.005059	0.110174	0.000000	0.431141
10	BEVERAGES	0.000000	0.000000	0.000000	0.000000	0.318324	0.000000	0.615518
11	OTHER FOODS	0.000000	0.000000	0.000000	0.014716	0.603015	0.025126	0.259512
12	TEXTILES	0.000000	0.000000	0.000000	0.000000	0.118182	0.118182	0.595455
13	APPAREL	0.000000	0.000000	0.001627	0.000000	0.335232	0.004068	0.558991
14	MINING	0.000000	0.000000	0.000000	0.001978	0.003956	0.057369	0.195846
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.007305	0.000000	0.061688
16	LOGGING	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	0.398235
17	SAWMILLS	0.000000	0.000000	0.000000	0.000619	0.007116	0.002785	0.529394
18	PLYWOOD	0.000000	0.000000	0.000000	0.000799	0.008390	0.016780	0.831003
19	OTHER WOOD	0.000000	0.000000	0.000000	0.000000	0.019231	0.044872	0.514957
20	FURNITURE	0.000000	0.000000	0.000000	0.000000	0.165060	0.173494	0.606024
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	0.623348
22	PAPER MILLS	0.000399	0.000000	0.000399	0.001196	0.034682	0.025912	0.853299
23	PAPER MILLS	0.000609	0.000000	0.000000	0.000609	0.007004	0.006395	0.640378
24	PRINTS&JBS	0.000429	0.052559	0.029507	0.060396	0.263255	0.012909	0.034117
25	INDUS&CHEM	0.000000	0.000000	0.000000	0.000000	-0.000000	0.011682	-0.000000
26	OTHER CHEM	0.000000	0.000568	0.000000	0.003692	0.028685	0.007100	0.779324
27	PET REFIN	0.000000	0.007839	0.001271	0.016314	0.269068	0.076059	0.301907
28	GLASS&STONE	0.000000	0.000000	0.000000	0.000000	0.071090	0.002370	0.327014
29	CEMENT&CLAY	0.000000	0.000000	0.000000	0.000000	0.061637	0.029756	0.036663
30	IRON&STEEL	0.000000	0.000000	0.000000	0.000000	-0.000000	0.044073	0.367021
31	NONFER MET	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000000	0.620146
32	ALUMINUM	0.000000	0.000000	0.000000	0.000000	0.012862	0.157556	0.057878
33	HEAVY METL	0.000000	0.000000	0.002498	0.003748	0.013741	0.076827	0.455713
34	LITE METL	0.000000	0.000000	0.000000	0.003960	0.022446	0.054180	0.213622
35	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.052190	0.424045	0.493942
36	MACH TOOL	0.000000	0.000000	0.000000	0.013038	-0.000000	0.075619	0.289439
37	NONELC EQP	0.000000	0.000000	0.000000	0.000000	-0.000000	0.140794	0.796390
38	ELFC MACH	0.000000	0.000000	0.000000	0.000000	0.058824	0.033024	0.626419
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	-0.000000	0.000205	0.987082
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.017372	0.004886	0.948426
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.068063	0.019734	0.903745
42	OTHER MFGS	0.000000	0.000000	0.002094	0.004188	0.089005	0.128796	0.565445
43	TRANSPORT	0.003850	0.001711	0.001604	0.009197	0.188857	0.039889	0.481446
44	ELFC COMPY	0.000402	0.012269	0.001408	0.029364	0.402655	0.068182	0.111022
45	CAS COMPY	0.010902	0.026759	0.005946	0.012884	0.359762	0.034688	0.124876
46	WATER SERV	0.010753	0.038123	0.006843	0.094819	0.637341	0.000000	0.001955
47	COMMUNICAT	0.011226	0.005052	0.018804	0.068482	0.349986	0.063710	0.070166
48	CONSTR	0.000400	0.007157	0.000400	0.011070	0.041344	0.876589	0.014137
49	WHOLESALE	0.001344	0.001310	0.001512	0.018074	0.820366	0.020426	0.025163
50	FINANCE	0.006607	0.004557	0.005240	0.020050	0.621782	0.043290	0.060150
51	INSURANCE	0.045491	0.006499	0.005686	0.019090	0.512998	0.032494	0.157189
52	REA ESTATE	0.027629	0.049911	0.019162	0.152406	0.483512	0.038324	0.018271
53	BUSI SERV	0.025349	0.023067	0.053992	0.068948	0.141952	0.072243	0.063118
54	PERS SERV	0.001109	0.001701	0.003401	0.032532	0.786470	0.007763	0.078743
55	VAL ADD	0.028520	0.005769	0.027553	0.060684	0.101033	0.094289	-0.000000
56	IMPORTS	0.000000	0.000186	0.003508	0.016784	0.298814	0.084808	-0.000000

NOT REPRODUCIBLE

TABLE C-30. - WASHINGTON 1980 DIRECT INPUT COEFFICIENT (Cont.)

	11	12	13	14	15	16	17	18	19	20
	OTHER FOODS	TEXTILES	APPAREL	MINING	FORESTRY	LOGGING	SAWMILLS	PLYWOOD	OTHER WOOD	FURN&FIX
1	FIELD CRP	0.116256	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.003948	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LVSTK&PROD	0.111486	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.008137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.006820	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANNIFRFS	0.005384	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MILLS	0.007121	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.003589	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	OTHER FOODS	0.006612	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004819
12	TEXTILES	0.000000	0.000000	0.008137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000000	0.049634	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.002513	0.000000	0.000000	0.009891	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.025974	0.274414	0.046411	0.020775	0.007835	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.048981	0.228032	0.127048	0.081197	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.044554	0.020775	0.110399	0.073494
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.049541	0.026353	0.024096
19	OTHER WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.020653	0.016867
20	FURN&FIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.012048
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MILLS	0.002872	0.000000	0.001627	0.000000	0.000000	0.000000	0.000000	0.001425	0.016867
23	PAPER MILLS	0.005176	0.000000	0.004882	0.000000	0.000000	0.001547	0.001199	0.000712	0.000000
24	PRINT&PUBS	0.015793	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004986	0.000000
25	INDUS&CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001425	0.021687
26	OTHER CHEM	0.001077	0.006364	0.001627	0.000000	0.000000	0.000000	0.000000	0.006410	0.002410
27	PET REFINC	0.005384	0.000000	0.000000	0.025717	0.000000	0.003651	0.004022	0.000000	0.000000
28	GLASS&STONE	0.004307	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.002849	0.000000
29	CEM&CLAY	0.000000	0.000000	0.000000	0.021761	0.000000	0.000000	0.000000	0.000712	0.000000
30	IRON&STEEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
31	NONFER MET	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000712	0.010843
32	ALUMINUM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000712	0.000000
33	HEAVY METL	0.000000	0.000000	0.000000	0.001978	0.000000	0.000304	0.000000	0.002849	0.001205
34	LITE METL	0.000000	0.000000	0.001627	0.001978	0.000000	0.001217	0.000000	0.000000	0.000000
35	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.000000	0.001521	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.000000	0.003956	0.000000	0.001217	0.001547	0.001199	0.000000
37	NONELC EQP	0.000000	0.000000	0.000000	0.009891	0.000000	0.001521	0.001238	0.001598	0.000000
38	ELEC MACH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.007229
42	OTHER MFGS	0.000359	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.022792	0.033735
43	TRANSPORT	0.003381	0.000000	0.001627	0.019782	0.000000	0.071190	0.064975	0.005194	0.002410
44	ELEC COMPY	0.001436	0.000000	0.001627	0.007913	0.000000	0.001238	0.001199	0.001425	0.002410
45	GAS COMPY	0.006102	0.000000	0.000000	0.003956	0.000000	0.000000	0.001199	0.000000	0.000000
46	WATER SERV	0.002872	0.000000	0.000000	0.000000	0.000000	0.003094	0.003556	0.001425	0.004819
47	COMMUNICAT	0.005743	0.000000	0.003255	0.001978	0.002435	0.003955	0.001199	0.000712	-0.000000
48	CONSTR	0.001436	-0.000000	0.001627	-0.000000	-0.000000	0.000000	0.001199	0.000712	-0.000000
49	WHOLESALE	0.002943	-0.000000	0.006539	0.027695	-0.000000	0.029814	0.040842	0.024770	0.033735
50	FINANCE	0.004307	0.000000	0.003255	0.005935	0.007305	0.002434	0.002475	0.002357	0.001425
51	INSURANCE	0.005743	0.000000	0.006539	0.009891	0.005740	0.003042	0.006498	0.005993	0.007123
52	REAL ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000
53	FUSI SERV	0.011794	-0.000000	0.008137	0.011869	0.002435	0.003042	0.010520	0.009972	0.002410
54	PERS SERV	0.004307	-0.000000	0.004882	0.005935	-0.000000	0.003955	0.004332	0.005194	0.007229
55	VAL ADJ	0.406617	0.381818	0.449959	0.539070	0.932630	0.452970	0.403116	0.340456	0.497590
56	IMPORTS	0.005786	0.504545	0.436941	0.299812	0.019481	0.077883	0.073020	0.239313	0.209639

NOT REPRODUCIBLE

TABLE C-30. - WASHINGTON 1980 DIRECT INPUT COEFFICIENT (Cont.)

	21	22	23	24	25	26	27	28	29	30
	PULPMILLS	PAPER MLLS	PAPBD MILS	PRINT&PUBS	INDUS&CHEM	OTHER CHEM	PET REFIN	GLASS&STONE	CEM&CLAY	IRON&STEEL
1	FIELD CRP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LVSTK&PRDH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANN&PRES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MLLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	CTR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHER WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	FURN&FIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	PAPBD MILS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	PRINT&PUBS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	INDUS&CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
26	OTHER CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
27	PET REFIN	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
28	GLASS&STONE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
29	CEM&CLAY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
30	IRON&STEEL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

NOT REPRODUCIBLE

TABLE C-30. - WASHINGTON 1980 DIRECT INPUT COEFFICIENT (Cont.)

	31	32	33	34	35	36	37	38	39	40
	NONFER MET	ALUMINUM	HEAVY METL	LITE METL	NONELC EQP	MACH TOOL	NONELC EQP	ELFC MACH	AEROSPACE	MOTOR VEH
1	FIELD CRP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LIVESTOCK	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANNSPRES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MLLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	OTHR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
12	TEXTILES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
14	MINING	0.019417	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	PLYWOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	OTHR WOOD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	FURNIFIX	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000000	0.000000	0.001249	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	PAPBD MILS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	PRINTSPRS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	INDUS&CHEM	0.000000	0.003215	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
26	OTHR CHEM	0.001214	0.000000	0.000369	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
27	PET REFIN	0.014563	0.012862	0.003123	0.001548	0.001864	0.000000	0.000000	0.000000	0.001086
28	GLASS&STNE	0.000000	0.000000	0.001249	0.001548	0.001864	0.003911	0.000000	0.000000	0.001086
29	CEM&CLAY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
30	IRON&STEEL	0.000000	0.003215	0.143036	0.011610	0.046598	0.016949	0.002889	0.000000	0.054832
31	NONFER MET	0.243932	0.000000	0.000625	0.007740	0.005592	0.006519	0.000000	0.000273	0.003257
32	ALUMINUM	0.000000	0.012862	0.008745	0.003096	0.003728	0.002608	0.010320	0.001660	0.019458
33	HEAVY METL	0.000000	0.000000	0.005609	0.003870	0.004660	0.000000	0.000000	0.000000	0.011944
34	LITE METL	0.001214	0.000000	0.001249	0.042570	0.013048	0.003911	0.003610	0.000864	0.013029
35	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.005592	0.010430	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.003123	0.003096	0.028891	0.023468	0.002888	0.002064	0.006346
37	NONELC EQP	0.000000	0.000000	0.000000	0.000000	0.008388	0.006519	0.003610	0.000000	0.000000
38	ELEC MACH	0.000000	0.000000	0.003123	0.000000	0.004660	0.003911	0.005776	0.005160	0.003298
39	AEROSPACE	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
42	OTHR MFGS	0.000000	0.000000	0.000000	0.000000	0.000000	0.003911	0.002166	0.000000	0.001820
43	TRANSPORT	0.000000	0.012862	0.004372	0.005418	0.003728	0.000000	0.002888	0.002064	0.001069
44	ELEC COMPY	0.001922	0.008232	0.009369	0.008514	0.003728	0.009126	0.004332	0.004128	0.002070
45	GAS COMPY	0.000631	0.003215	0.000000	0.005418	0.000000	0.000000	0.001444	0.002064	0.000819
46	WATER SERV	0.000000	0.000000	0.000000	0.000000	0.000000	0.002608	0.000000	0.000000	0.000000
47	COMMUNICAT	0.002427	-0.000000	0.002498	0.003096	0.001864	0.003911	0.002888	0.004128	0.004958
48	CONSTR	-0.000000	-0.000000	-0.000000	-0.000000	0.001864	0.003911	0.001444	-0.000000	0.001751
49	WHSLES&RET	0.012136	0.006431	0.014991	0.005418	0.015843	0.015645	0.015162	0.011352	0.002229
50	FINANCE	0.002427	0.003215	0.005621	0.005418	0.001864	0.003911	0.002888	0.002064	0.000819
51	INSURANCE	0.000000	0.006431	0.006871	0.007740	0.006524	0.006519	0.007220	0.006192	0.002161
52	REA ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000
53	BUSI SERV	0.003641	0.003215	0.006871	0.006966	0.001864	0.003911	0.010128	0.006192	0.004117
54	PER SERV	0.003641	0.003215	0.003123	0.003870	0.003728	0.003911	0.004332	0.004128	0.000819
55	VAL ADD	0.216019	0.376206	0.520924	0.334365	0.533085	0.491525	0.770397	0.475749	0.419896
56	IMPORTS	0.441748	0.504823	0.224859	0.527090	0.300093	0.372881	0.150181	0.434469	0.526588

NOT REPRODUCIBLE

TABLE C-30. - WASHINGTON 1980 DIRECT INPUT COEFFICIENT (Cont.)

		41	42	43	44	45	46	47	48	49	50
		SHIP BLDG	OTHER MFGS	TRANSPORT	ELEC COMPY	GAS COMPY	WATER SERV	COMMUNICAT	CONSTR	WHSLS&RET	FINANCE
1	FIELD CROP	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	LVST&PROD	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
4	OTHER AGRI	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001245	0.000000	0.000000
5	FISHING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6	MEAT PRODS	0.000000	0.000000	0.000562	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	DAIRY PROD	0.000000	0.000000	0.000214	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8	CANN&PRES	0.000000	0.000000	0.001818	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
9	GRAIN MLLS	0.000000	0.000000	0.000214	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	BEVERAGES	0.000000	0.000000	0.000428	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
11	OTHR FOODS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000605	0.000000
12	TEXTILES	0.000000	0.001047	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
13	APPAREL	0.000403	0.006283	0.000428	0.000000	0.000000	0.000000	0.000000	0.000978	0.000000	0.000000
14	MINING	0.000000	0.000000	0.001390	0.000000	0.000000	0.000000	0.000000	0.014537	0.000000	0.000000
15	FORESTRY	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	SAWMILLS	0.001208	0.004188	0.000000	0.000000	0.000000	0.000000	0.000000	0.039166	0.000000	0.000000
18	PLYWOOD	0.001611	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.004890	0.000000	0.000000
19	OTHER WOOD	0.001208	0.002094	0.005240	0.000000	0.000000	0.000000	0.000000	0.019383	0.000538	0.000000
20	FURN&FIX	0.000403	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001245	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000403	0.004188	0.000000	0.000603	0.000000	0.000000	0.002807	0.000000	0.002520	0.000000
23	PAPBD MILS	0.000805	0.004188	0.001176	0.000000	0.000000	0.000000	0.000000	0.000000	0.005174	0.000456
24	PRINT&PUBS	0.000805	0.000000	0.001390	0.000017	0.003964	0.001955	0.003087	0.000756	0.023013	0.022329
25	INDUS&CHEM	0.000000	0.000000	0.000000	0.000000	0.000000	0.046921	0.000000	0.000000	0.000000	0.000000
26	OTHER CHEM	0.004832	0.003141	0.002887	0.000000	0.000000	0.000000	0.000000	0.003779	0.000000	0.000000
27	PET REFIN	0.000403	0.000000	0.051011	0.000218	0.000000	0.000000	0.002526	0.009025	0.007525	0.001595
28	GLASS&STONE	0.000403	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001689	0.000134	0.000000
29	CEM&CLAY	0.002014	0.000000	0.000428	0.000000	0.000000	0.000000	0.000561	0.060016	0.000000	0.000000
30	IRON&STEEL	0.019331	0.002094	0.001176	0.000402	0.000000	0.000000	0.000000	0.011025	0.000000	0.000000
31	NONFER MET	0.002014	0.000000	0.000107	0.000603	0.000000	0.000000	0.000000	0.001200	0.000000	0.000000
32	ALUMINUM	0.000000	0.017801	0.000000	0.000000	0.000000	0.000000	0.000000	0.001556	0.000000	0.000000
33	HEAVY METL	0.002416	0.000000	0.000000	0.000000	0.000000	0.001955	0.000561	0.026496	0.000269	0.000000
34	LITE METL	0.005638	0.021990	0.001818	0.001609	0.006938	0.000000	0.000000	0.004668	0.000168	0.000000
35	NONELC EXP	0.002416	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000134	0.000000
36	MACH TOOL	0.002416	0.002094	0.000749	0.000000	0.000000	0.000000	0.000000	0.002890	0.000000	0.000000
37	NONELC EXP	0.001208	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000168	0.000000
38	ELEC MACH	0.006444	0.004188	0.000642	0.001006	0.000000	0.000000	0.002526	0.001600	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.001497	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000962	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
41	SHIP BLDG	0.001208	0.000000	0.001069	0.000000	0.000000	0.000000	0.000000	-0.000000	-0.000000	0.000000
42	OTHER MFGS	0.002416	0.004188	0.000214	0.000000	0.000000	0.000000	0.000561	0.000578	0.000370	0.000456
43	TRANSPORT	0.004430	0.004188	0.004385	0.012470	0.000000	0.000000	0.000842	0.014537	0.011288	0.007974
44	ELEC COMPY	0.002416	0.008377	0.004064	0.144811	0.000000	0.000782	0.005894	0.000483	0.015823	0.004557
45	GAS COMPY	0.000805	0.002094	0.001818	0.000000	0.000000	0.000000	0.000000	0.000000	0.002217	0.001139
46	WATER SERV	0.000805	0.000000	0.000856	0.000603	0.000000	0.000000	0.000000	0.000267	0.002553	0.000911
47	COMMUNICAT	0.002014	0.004188	0.008876	0.002615	0.004955	0.001955	0.007297	0.003912	0.022475	0.016860
48	CONSTR	0.000403	-0.000000	0.023848	0.019912	0.014866	0.018573	0.018524	0.001067	0.008164	0.007519
49	WHSLS&RET	0.011679	0.006283	0.016148	0.007844	-0.000000	-0.000000	0.004491	0.041211	0.014379	0.008886
50	FINANCE	0.002014	0.006283	0.003101	0.002212	0.013964	0.003910	0.002245	0.003823	0.010247	0.049214
51	INSURANCE	0.006444	0.006283	0.008662	0.006838	0.006938	0.007820	0.007017	0.005868	0.006114	0.004329
52	REAL ESTATE	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	-0.000000	0.001403	-0.000000	0.014177	0.009569
53	BLSI SERV	0.013693	0.017801	0.010373	0.014883	0.012384	0.005865	0.009543	0.023384	0.013505	0.021873
54	PERS SERV	0.002416	0.004188	0.020319	0.003821	0.003964	0.003910	0.003649	0.003067	0.012363	0.010025
55	VAL ADD	0.258155	0.673298	0.484975	0.476589	0.533201	0.308895	0.703340	0.411132	0.808708	0.813853
56	IMPORTS	0.634716	0.145550	0.336755	0.346943	0.408325	0.590420	0.223127	0.284520	0.016898	0.018455

NOT REPRODUCIBLE

TABLE C-30. - WASHINGTON 1980 DIRECT INPUT COEFFICIENT (Cont.)

	51	52	53	54
	INSURANCE	REA ESTATE	BUSI SERV	PERS SERV
1	FIELD CRUP	0.000000	0.000000	0.000000
2	VEGETABLES	0.000000	0.000000	0.000000
3	LVSTKSPRCL	0.000000	0.000000	0.000236
4	LTFER AGRI	0.000000	0.000000	0.000148
5	FISHING	0.000000	0.000000	0.000000
6	MEAT PRDUS	0.000000	0.000000	0.000665
7	DAIRY PRD	0.000000	0.000000	0.000665
8	CANMPRES	0.000000	0.000000	0.001257
9	GRAIN MLLS	0.000000	0.000000	0.000665
10	BEVERAGES	0.000000	0.000000	0.000000
11	CTHR FOODS	0.000000	0.000000	0.003031
12	TEXTILES	0.000000	0.000000	0.000000
13	APPAREL	0.000000	0.000507	0.000000
14	MINING	0.000000	0.000000	0.000148
15	FORESTRY	0.000000	0.000000	0.000000
16	LOGGING	0.000000	0.000000	0.000000
17	SAWMILLS	0.000000	0.000000	0.000148
18	PLYWOOD	0.000000	0.000000	0.000148
19	CTHER WOOD	0.000000	0.000000	0.000000
20	FURN&FIX	0.000000	0.000000	0.000000
21	PULPMILLS	0.000000	0.000000	0.000000
22	PAPER MLLS	0.000406	0.000000	0.000444
23	PAPBD MILS	0.000406	0.000000	0.000148
24	FRINT&PUBS	0.013404	0.016223	0.009686
25	INDUS&CHEM	0.000000	0.000000	0.000000
26	CTHER CHEM	0.000000	0.000891	0.000961
27	PET REFINE	0.000000	0.001521	0.005693
28	GLASS&STONE	0.000000	0.000000	0.000000
29	CEM&CLAY	0.000000	0.000000	0.000000
30	IRON&STEL	0.000000	0.000000	0.000000
31	NONFER MET	0.000000	0.000000	0.000000
32	ALUMINUM	0.000000	0.000000	0.000000
33	HEAVY METL	0.000000	0.000000	0.000444
34	LITE METL	0.000000	0.000000	0.002957
35	NONELC EQP	0.000000	0.000000	0.000000
36	MACH TOOL	0.000000	0.000000	0.000739
37	NONELC EQP	0.000000	0.000000	0.000000
38	ELEC MACH	0.000000	0.000000	0.000000
39	AEROSPACE	0.000000	0.000000	0.000000
40	MOTOR VEH	0.000000	0.000000	0.000000
41	SHIP BLDG	0.000000	0.000000	0.000000
42	CTHER MFGS	0.000000	0.000517	0.000296
43	TRANSPORT	0.007311	0.007130	0.006359
44	ELEC COMPY	0.000406	0.027184	0.010795
45	GAS COMPY	0.002234	0.001521	0.000961
46	WATER SERV	0.002234	0.001774	0.007172
47	COMMUNICAT	0.008123	0.008021	0.018041
48	CCNSTR	0.001828	0.007174	0.018410
49	WHSLS&RET	0.008123	0.007380	0.039773
50	FINANCE	0.005890	0.008913	0.006506
51	INSURANCE	0.045491	0.014260	0.006950
52	REA ESTATE	0.012551	0.049911	0.025287
53	BUSI SERV	0.020309	0.040553	0.020111
54	PERS SERV	0.003046	0.010250	0.032532
55	VAL AD	0.850528	0.639037	0.658632
56	IMPORTS	0.017609	0.003021	0.119926

NOT REPRODUCIBLE

	1	2	3	4	5	6	7	8	9	10
	FIELD CROP	VEGETABLES	LVSTK&PROD	OTHER AGRI	FISHING	MEAT PRODS	DAIRY PROD	CANN&PRES	GRAIN MLLS	BEVERAGES
1	FIELD CROP	0.037514	0.000006	0.065322	0.000008	0.002998	0.034303	0.03829	0.223570	0.013844
2	VEGETABLES	0.000005	0.000005	0.000183	0.000006	0.001818	0.000127	0.000159	0.000897	0.005555
3	LVSTK&PROD	0.000012	0.000012	0.078330	0.000014	0.007228	0.482299	0.544524	0.008569	0.000191
4	OTHER AGRI	0.000051	0.006589	0.000547	0.000545	0.000093	0.000329	0.000289	0.003629	0.000058
5	FISHING	0.000001	0.000001	0.000030	0.000001	0.005913	0.000020	0.000021	0.046262	0.000006
6	MEAT PRODS	0.000012	0.000012	0.002424	0.000015	0.008748	1.036494	0.001275	0.004334	0.000058
7	DAIRY PROD	0.000008	0.000008	0.003824	0.000009	0.006547	0.003082	1.165693	0.000818	0.000093
8	CANN&PRES	0.000023	0.000023	0.000646	0.000027	0.008490	0.000444	0.000452	1.012171	0.004181
9	GRAIN MLLS	0.000011	0.000011	0.147543	0.000013	0.007487	0.087706	0.075150	0.005893	0.000699
10	BEVERAGES	0.000004	0.000004	0.005945	0.000004	0.005923	0.002683	0.003934	0.000379	1.056404
11	OTHER FOODS	0.000036	0.000030	0.004717	0.000038	0.009011	0.005312	0.011550	0.002450	0.001555
12	TEXTILES	0.000001	0.000058	0.000438	0.000026	0.0024950	0.000273	0.000249	0.001219	0.003032
13	APPAREL	0.000043	0.000648	0.002039	0.000037	0.005995	0.001231	0.001073	0.000521	0.000056
14	MINING	0.000996	0.000477	0.000609	0.000586	0.000112	0.000458	0.000666	0.000541	0.000429
15	FORESTRY	0.000147	0.001279	0.000209	0.000453	0.000460	0.000309	0.000517	0.000914	0.000464
16	LOGGING	0.000334	0.003913	0.000555	0.001409	0.001170	0.000937	0.001604	0.002930	0.001487
17	SAWMILLS	0.000966	0.002214	0.000951	0.001933	0.001152	0.000796	0.001105	0.001282	0.000813
18	PLYWOOD	0.000135	0.000489	0.000141	0.000176	0.000286	0.000134	0.000200	0.000286	0.000155
19	OTHER WOOD	0.000494	0.007572	0.000515	0.000497	0.008674	0.000479	0.001033	0.002637	0.000363
20	FURN&FIX	0.000029	0.000019	0.000027	0.000021	0.000009	0.000018	0.000021	0.000011	0.000011
21	PULPMILLS	0.000060	0.000589	0.000532	0.002416	0.000207	0.001478	0.002654	0.005016	0.002589
22	PAPER MLLS	0.000297	0.008554	0.000615	0.000923	0.000469	0.000803	0.001248	0.003237	0.002087
23	PAPER MILLS	0.000466	0.043227	0.004581	0.001265	0.001730	0.012952	0.023299	0.043834	0.022530
24	PRINT&PUBS	0.001600	0.001674	0.002072	0.001744	0.002084	0.002094	0.002974	0.003041	0.001643
25	INDUS&CHEM	0.001802	0.003671	0.000298	0.000631	0.000443	0.000399	0.003028	0.001494	0.000759
26	OTHER CHEM	0.012954	0.030131	0.001260	0.000360	0.012611	0.000867	0.001087	0.007542	0.004557
27	PET REFIN	0.031599	0.011857	0.015545	0.014434	0.040463	0.016692	0.016274	0.008744	0.009764
28	GLASS&STONE	0.000580	0.000136	0.000356	0.004387	0.000414	0.000208	0.004875	0.006780	0.000228
29	CEM&CLAY	0.002908	0.001126	0.001464	0.001246	0.000178	0.001200	0.001250	0.000763	0.001102
30	IRON&STEEL	0.000523	0.000335	0.000450	0.000307	0.000461	0.000393	0.000518	0.001182	0.000260
31	NONFER MET	0.000164	0.000263	0.000672	0.000047	0.000168	0.000112	0.000069	0.000858	0.000076
32	ALUMINUM	0.005982	0.003644	0.000446	0.000040	0.000210	0.000260	0.000271	0.001047	0.000413
33	HEAVY METL	0.000694	0.000470	0.000617	0.000544	0.000187	0.000463	0.001390	0.000605	0.000355
34	LITE METL	0.000401	0.000340	0.000349	0.000250	0.001677	0.006248	0.000764	0.073545	0.000694
35	NONELC EQP	0.000008	0.000012	0.000008	0.000007	0.000048	0.000009	0.000012	0.000020	0.000008
36	MACH TOOL	0.000180	0.000255	0.000184	0.000087	0.000119	0.000111	0.000122	0.000660	0.000099
37	NONELC EQP	0.000021	0.000121	0.000032	0.000052	0.000061	0.000045	0.000081	0.001823	0.000070
38	ELEC MACH	0.000128	0.000090	0.000104	0.000136	0.0005768	0.000092	0.000118	0.000369	0.000073
39	AEROSPACE	0.000011	0.000011	0.000019	0.000013	0.000018	0.000046	0.000061	0.000061	0.000031
40	MOTOR VEH	0.002070	0.000613	0.001648	0.000026	0.000060	0.000785	0.000890	0.000200	0.000487
41	SHIP BLDG	0.000021	0.000013	0.000022	0.000015	0.016631	0.000038	0.000051	0.000810	0.000029
42	OTHER MESS	0.000116	0.000211	0.000062	0.000091	0.005923	0.000075	0.000114	0.000423	0.000094
43	TRANSPORT	0.007400	0.007355	0.012682	0.008705	0.011919	0.030567	0.040466	0.040248	0.020193
44	ELEC COMPY	0.015975	0.007358	0.008658	0.006537	0.001648	0.007683	0.010025	0.009022	0.009303
45	CAS COMPY	0.000253	0.000793	0.000910	0.000496	0.000541	0.004570	0.006498	0.006607	0.004666
46	WATER SERV	0.003296	0.004995	0.000485	0.006794	0.000423	0.002729	0.002254	0.006551	0.001032
47	COMMUNICAT	0.006737	0.009628	0.007685	0.027933	0.007992	0.007995	0.008453	0.007758	0.004230
48	CONSTR	0.021578	0.014785	0.019807	0.016914	0.001558	0.013521	0.016076	0.008568	0.010718
49	WHOLESALE	0.020935	0.012105	0.029137	0.018230	0.028675	0.037779	0.053472	0.043052	0.021643
50	FINANCE	0.007076	0.007387	0.004949	0.016943	0.007348	0.006406	0.006267	0.011705	0.008608
51	INSURANCE	0.008705	0.008291	0.010133	0.008157	0.010638	0.008290	0.010429	0.011653	0.009162
52	REAL ESTATE	0.001050	0.000676	0.000932	0.001104	0.001197	0.001146	0.001612	0.001389	0.000994
53	BUSI SERV	0.001131	0.009670	0.008932	0.025265	0.040804	0.016538	0.024822	0.020870	0.024600
54	PERF SERV	0.006909	0.006976	0.007453	0.008302	0.002300	0.007716	0.011810	0.008294	0.006547

TABLE C-31. - WASHINGTON 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

	11	12	13	14	15	16	17	18	19	20
	LTNR FOODS	TEXTILES	APPAREL	MINING	FORESTRY	LOGGING	SAWMILLS	PLYWOOD	OTHER WOOD	FURN&FIX
1	FIELD CROP	0.141975	0.000001	0.000005	0.000010	0.000000	0.000015	0.000019	0.000014	0.000015
2	VEGETABLES	0.005370	0.000001	0.000003	0.000011	0.000000	0.000031	0.000036	0.000019	0.000020
3	LIVESTOCK	0.017355	0.000002	0.000008	0.000023	0.000000	0.000052	0.000062	0.000036	0.000038
4	OTHER AGRI	0.000312	0.000153	0.000626	0.000004	0.000000	0.000015	0.000010	0.000089	0.000048
5	FISHING	0.000276	0.000000	0.000001	0.000002	0.000000	0.000007	0.000038	0.000004	0.000004
6	MEAT PRODS	0.001275	0.000002	0.000007	0.000029	0.000000	0.000082	0.000095	0.000051	0.000052
7	DAIRY PROD	0.000328	0.000001	0.000005	0.000013	0.000000	0.000025	0.000030	0.000018	0.000020
8	CANN&PRES	0.000604	0.000003	0.000012	0.000053	0.000001	0.000149	0.000173	0.000093	0.000096
9	GRAIN MLLS	0.073896	0.000001	0.000007	0.000018	0.000000	0.000034	0.000041	0.000025	0.000028
10	BEVERAGES	0.004061	0.000000	0.000001	0.000011	0.000000	0.000035	0.000040	0.000020	0.000021
11	LTNR FOODS	1.073896	0.000004	0.000024	0.000047	0.000001	0.000047	0.000067	0.000051	0.000063
12	TEXTILES	0.000275	1.000002	0.000569	0.000001	0.000000	0.000009	0.000003	0.000004	0.000004
13	APPAREL	0.001057	0.000004	1.052236	0.000021	0.000002	0.001052	0.000294	0.000173	0.000173
14	MINING	0.003087	0.000042	0.000079	1.014737	0.000006	0.000219	0.000446	0.000454	0.000412
15	FORESTRY	0.000087	0.000029	0.000146	0.000043	1.026669	0.296295	0.120639	0.064742	0.048181
16	LOGGING	0.002851	0.000096	0.000475	0.000120	0.000006	1.051637	0.251130	0.146228	0.119617
17	SAWMILLS	0.001107	0.000042	0.000220	0.000141	0.000009	0.000216	1.046871	0.023091	0.118797
18	PLYWOOD	0.000253	0.000009	0.000047	0.000021	0.000001	0.000037	0.000042	1.052160	0.028348
19	OTHER WOOD	0.001234	0.000016	0.000067	0.0000205	0.000005	0.000504	0.000580	0.000330	1.021405
20	FURN&FIX	0.000010	0.000000	0.000003	0.000002	0.000000	0.000005	0.000005	0.000004	1.012198
21	PULPMILLS	0.004876	0.000154	0.000702	0.000110	0.000003	0.000046	0.000073	0.000177	0.000262
22	PAPER MLLS	0.006069	0.000297	0.001984	0.000340	0.000049	0.000250	0.000528	0.000510	0.000470
23	PAPBD MILS	0.041917	0.001302	0.005769	0.000898	0.000012	0.000348	0.000520	0.001457	0.002217
24	PRINT&PUBS	0.019039	0.000831	0.000686	0.001604	0.000411	0.001409	0.003848	0.003057	0.002824
25	INDUS&CHEM	0.001079	0.004873	0.000230	0.000180	0.000003	0.000079	0.000140	0.002722	0.005363
26	OTHER CHEM	0.004029	0.008944	0.002611	0.000196	0.000009	0.000298	0.001045	0.047847	0.003201
27	PET REFIN	0.013560	0.000839	0.000518	0.028883	0.000044	0.008217	0.010402	0.003819	0.010341
28	GLASS&STONE	0.004811	0.000156	0.000051	0.000056	0.000000	0.000032	0.000037	0.000108	0.002954
29	CEM&CLAY	0.000916	0.000037	0.000179	0.024893	0.000014	0.000289	0.001397	0.001711	0.001234
30	IRON&STEEL	0.000262	0.000022	0.000071	0.001700	0.000004	0.000355	0.000296	0.000219	0.001055
31	NONFER MET	0.000083	0.000643	0.000046	0.000128	0.000001	0.000067	0.000085	0.000392	0.000096
32	ALUMINUM	0.000871	0.000033	0.000013	0.000065	0.000001	0.000038	0.000032	0.000040	0.001297
33	HEAVY METL	0.000310	0.000020	0.000092	0.002270	0.000010	0.000473	0.000243	0.000191	0.000926
34	LITE METL	0.001952	0.000186	0.001849	0.002552	0.000004	0.001635	0.002042	0.000536	0.001932
35	NONELC EQP	0.000012	0.000006	0.000002	0.000077	0.000000	0.001629	0.000415	0.000673	0.000214
36	MACH TOOL	0.000126	0.000497	0.000037	0.004383	0.000001	0.001452	0.002102	0.001870	0.001218
37	NONELC EQP	0.000893	0.000019	0.000019	0.010111	0.000000	0.001639	0.001718	0.001978	0.000415
38	ELEC MACH	0.000105	0.000032	0.000022	0.000241	0.000008	0.000112	0.000135	0.000094	0.000083
39	AEROSPACE	0.000061	0.000002	0.000004	0.000035	0.000000	0.000115	0.000135	0.000067	0.000064
40	MOTOR VEH	0.000372	0.000002	0.000007	0.000103	0.000000	0.000195	0.000109	0.000105	0.000075
41	SHIP BLDG	0.000054	0.000001	0.000003	0.000037	0.000000	0.000085	0.000099	0.000049	0.000050
42	OTHER MFGS	0.000538	0.000374	0.000035	0.000086	0.000008	0.000060	0.000085	0.000252	0.000083
43	TRANSPORT	0.040558	0.001020	0.002402	0.023228	0.000173	0.076137	0.087815	0.044244	0.041995
44	ELEC COMPY	0.0006613	0.000641	0.002530	0.010946	0.000094	0.001354	0.014012	0.008130	0.006775
45	CAS COMPY	0.007701	0.000087	0.002190	0.004418	0.000044	0.000305	0.001718	0.001579	0.002018
46	WATER SERV	0.003886	0.000058	0.000184	0.000314	0.000044	0.000267	0.000390	0.001538	0.000350
47	COMMUNICAT	0.005592	0.000688	0.004428	0.003850	0.002812	0.006842	0.007336	0.006558	0.004634
48	CONSTR	0.007423	0.000383	0.002342	0.001669	0.000173	0.003539	0.003651	0.003434	0.002900
49	WHOLESALE	0.035484	0.001336	0.008008	0.030901	0.000239	0.033945	0.053700	0.034199	0.043734
50	FINANCE	0.007721	0.010234	0.004188	0.007444	0.007991	0.005838	0.005586	0.004735	0.003644
51	INSURANCE	0.009979	0.010429	0.007717	0.011853	0.010572	0.007652	0.010910	0.009375	0.010729
52	REAL ESTATE	0.001375	0.000316	0.000541	0.001089	0.000269	0.000929	0.001433	0.001081	0.001260
53	BUSI SERV	0.028027	0.001204	0.010027	0.014867	0.003116	0.006275	0.015703	0.013794	0.015023
54	PERF SERV	0.000957	0.000986	0.005853	0.008130	0.000192	0.006746	0.008970	0.008636	0.009308

TABLE C-31. - WASHINGTON 1980 DIRECT AND INDIRECT REQUIREMENTS (CONT.)

		21	22	23	24	25	26	27	28	29	30
		PULPMILLS	PAPER MILLS	PAPBD MILLS	PRINT&PUBS	INDUS&CHEM	OTHER CHEM	PET REFIN	GLASS&STONE	CEM&CLAY	IRON&STEEL
1	FIELD CROP	0.000015	0.000017	0.000011	0.000028	0.000004	0.000008	0.000011	0.000013	0.000018	0.000012
2	VEGETABLES	0.000024	0.000013	0.000015	0.000015	0.000017	0.000006	0.000013	0.000013	0.000032	0.000009
3	LIVESTOCK	0.000043	0.000025	0.000027	0.000048	0.000013	0.000015	0.000027	0.000028	0.000056	0.000019
4	OTHER AGRI	0.000024	0.000018	0.000018	0.000043	0.000019	0.000019	0.000010	0.000040	0.000010	0.000014
5	FISHING	0.000005	0.000003	0.000003	0.000003	0.000001	0.000001	0.000003	0.000003	0.000007	0.000002
6	MEAT PROD	0.000064	0.000035	0.000038	0.000038	0.000018	0.000016	0.000033	0.000033	0.000083	0.000024
7	DAIRY PROD	0.000022	0.000013	0.000014	0.000035	0.000007	0.000010	0.000016	0.000016	0.000028	0.000011
8	CANN&PRES	0.000116	0.000063	0.000069	0.000070	0.000033	0.000030	0.000060	0.000060	0.000152	0.000044
9	GRAIN MILLS	0.000030	0.000018	0.000020	0.000046	0.000009	0.000013	0.000021	0.000022	0.000038	0.000017
10	BEVERAGES	0.000026	0.000014	0.000015	0.000005	0.000007	0.000005	0.000011	0.000011	0.000034	0.000009
11	OTHER FOODS	0.000060	0.000041	0.000045	0.000036	0.000017	0.000037	0.000043	0.000057	0.000064	0.000064
12	TEXTILES	0.000005	0.000019	0.000024	0.000005	0.000003	0.000023	0.000001	0.000096	0.000036	0.000003
13	APPAREL	0.000028	0.000092	0.000087	0.000031	0.000027	0.000032	0.000022	0.000026	0.000047	0.000025
14	MINING	0.000316	0.000264	0.000086	0.000388	0.000243	0.000372	0.000193	0.000398	0.000183	0.000782
15	FORESTRY	0.000219	0.000168	0.000090	0.000182	0.000022	0.000298	0.000078	0.000142	0.000075	0.000167
16	LOGGING	0.000335	0.000257	0.000260	0.000236	0.000058	0.000097	0.000203	0.000203	0.000215	0.000435
17	SAWMILLS	0.000461	0.000242	0.000184	0.000203	0.000099	0.000314	0.000307	0.000129	0.000190	0.000579
18	PLYWOOD	0.000337	0.000669	0.000305	0.000638	0.000014	0.000076	0.000054	0.000337	0.000159	0.000103
19	OTHER WOOD	0.000124	0.000494	0.000114	0.000191	0.000130	0.000098	0.000666	0.000219	0.000542	0.000183
20	FURN&FIX	0.000005	0.000005	0.000005	0.000002	0.000002	0.000001	0.000007	0.000003	0.000007	0.000010
21	PULPMILLS	0.000029	0.000034	0.000029	0.000258	0.000031	0.000174	0.000082	0.000079	0.000329	0.000210
22	PAPER MILLS	0.000169	0.000130	0.000119	0.000536	0.000155	0.000262	0.000563	0.000870	0.000361	0.000588
23	PAPBD MILLS	0.000087	0.000491	0.000557	0.000271	0.000239	0.000492	0.000594	0.000830	0.000458	0.000173
24	PRINT&PUBS	0.000292	0.000167	0.000193	0.000580	0.000652	0.000488	0.000104	0.000208	0.000328	0.000274
25	INDUS&CHEM	0.000232	0.000115	0.000130	0.000183	0.000584	0.000538	0.000503	0.000207	0.000757	0.000177
26	OTHER CHEM	0.000541	0.000634	0.000632	0.000770	0.000705	0.000760	0.000647	0.000448	0.000183	0.000206
27	PET REFIN	0.000780	0.000262	0.000176	0.000213	0.000591	0.000893	0.000247	0.000345	0.000250	0.000164
28	GLASS&STONE	0.000068	0.000035	0.000038	0.000050	0.000024	0.000179	0.000028	0.000048	0.000194	0.000121
29	CEM&CLAY	0.000885	0.000157	0.000236	0.000484	0.000178	0.000125	0.000359	0.000147	0.000479	0.000592
30	IRON&STEEL	0.000148	0.000438	0.000628	0.000168	0.000103	0.000181	0.000280	0.000195	0.000346	0.000880
31	NONFER MET	0.000115	0.000127	0.000210	0.000174	0.000117	0.000743	0.000093	0.000196	0.000185	0.000421
32	ALUMINUM	0.000352	0.000080	0.000098	0.000049	0.000479	0.000368	0.000078	0.000024	0.000203	0.000081
33	HEAVY METL	0.000194	0.000430	0.000371	0.000224	0.000063	0.000061	0.000621	0.000180	0.000567	0.000313
34	LITE METL	0.000249	0.000161	0.000134	0.000237	0.000253	0.000210	0.000486	0.000503	0.000153	0.000196
35	NONELC ELP	0.000423	0.000120	0.000131	0.000014	0.000002	0.000064	0.000003	0.000021	0.000131	0.000037
36	MACH TOOL	0.000147	0.000272	0.000307	0.000183	0.000098	0.000573	0.000073	0.000297	0.000640	0.000175
37	NONELC ELP	0.000437	0.000293	0.000197	0.000262	0.000237	0.000210	0.000019	0.000376	0.000248	0.000097
38	ELEC MACH	0.000956	0.000319	0.000193	0.000084	0.000101	0.000076	0.000122	0.000094	0.000387	0.000476
39	AFROSPACE	0.000086	0.000045	0.000049	0.000015	0.000023	0.000015	0.000036	0.000036	0.000113	0.000029
40	MOTOR VEH	0.000201	0.000072	0.000076	0.000021	0.000022	0.000020	0.000455	0.000050	0.000252	0.000069
41	SHIP BLDG	0.000069	0.000037	0.000041	0.000012	0.000019	0.000014	0.000454	0.000027	0.000102	0.000022
42	OTHER MFGS	0.000102	0.000039	0.000124	0.000113	0.000251	0.000419	0.000263	0.000226	0.000158	0.000073
43	TRANSPORT	0.000603	0.000242	0.000257	0.000189	0.000526	0.000717	0.000313	0.000355	0.000449	0.000823
44	ELEC COMPY	0.000581	0.000139	0.000466	0.000777	0.000721	0.000579	0.000251	0.000125	0.000450	0.000204
45	GAS COMPY	0.000246	0.000495	0.000297	0.000387	0.000123	0.000538	0.000101	0.000585	0.000144	0.000744
46	WATER SERV	0.000311	0.000181	0.000194	0.000560	0.000119	0.000225	0.000123	0.000411	0.000167	0.000373
47	COMMUNICAT	0.000541	0.000310	0.000371	0.000147	0.000380	0.000292	0.000193	0.000681	0.000794	0.000727
48	CONSTR	0.000681	0.000457	0.000418	0.000525	0.000190	0.000954	0.000494	0.000218	0.000350	0.000767
49	WHS&WRET	0.000638	0.000247	0.000276	0.000548	0.000370	0.000251	0.000244	0.000440	0.000107	0.000534
50	FINANCE	0.000757	0.000767	0.000877	0.000618	0.000293	0.000650	0.000310	0.000779	0.000304	0.000713
51	INSURANCE	0.000667	0.000475	0.000268	0.000694	0.000338	0.000822	0.000674	0.000208	0.000334	0.000832
52	REA ESTATE	0.000126	0.000081	0.000095	0.000164	0.000339	0.000704	0.000573	0.000102	0.000136	0.000168
53	BUSI SERV	0.000750	0.000698	0.000734	0.000382	0.000402	0.000713	0.000406	0.000371	0.000131	0.000444
54	PEPS SERV	0.000764	0.000756	0.000717	0.000611	0.000330	0.000980	0.000255	0.000264	0.000115	0.000693

NOT REPRODUCIBLE

TABLE C-31. - WASHINGTON 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

	21	32	33	34	35	36	37	38	39	40
	NONFER MET	ALUMINUM	HEAVY METL	LITE METL	NONELC EQP	MACH TOOL	NONELC EQP	ELEC MACH	AEROSPACE	MOTOR VEH
1	FIELD CRCP	0.000006	0.000006	0.000005	0.000015	0.000005	0.000005	0.000005	0.000001	0.000004
2	VEGETABLES	0.000002	0.000007	0.000005	0.000004	0.000002	0.000003	0.000003	0.000001	0.000003
3	LVSTK SPRCD	0.000008	0.000013	0.000011	0.000009	0.000006	0.000008	0.000007	0.000002	0.000007
4	OTHER AGRI	0.000006	0.000003	0.000021	0.000008	0.000005	0.000008	0.000004	0.000004	0.000011
5	FISHING	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001	0.000000	0.000001
6	MEAT PRODS	0.000006	0.000018	0.000012	0.000010	0.000009	0.000005	0.000007	0.000002	0.000008
7	DAIRY PROD	0.000005	0.000007	0.000006	0.000006	0.000004	0.000005	0.000005	0.000001	0.000004
8	CANNIPPES	0.000011	0.000032	0.000022	0.000019	0.000017	0.000009	0.000014	0.000012	0.000015
9	GRAIN MLLS	0.000008	0.000010	0.000009	0.000008	0.000007	0.000007	0.000008	0.000002	0.000006
10	BEVERAGES	0.000001	0.000007	0.000004	0.000003	0.000003	0.000001	0.000002	0.000002	0.000003
11	OTHR FOODS	0.000031	0.000020	0.000033	0.000021	0.000030	0.000028	0.000027	0.000024	0.000017
12	TEXTILES	0.000000	0.000000	0.000001	0.000012	0.000001	0.000006	0.000005	0.000009	0.000009
13	APPAREL	0.000006	0.000012	0.000012	0.000010	0.000009	0.000037	0.000026	0.000007	0.000024
14	MINING	0.026102	0.001006	0.001081	0.000373	0.000608	0.000518	0.000092	0.000380	0.000114
15	FORESTRY	0.000016	0.000020	0.000069	0.000168	0.000037	0.000049	0.000120	0.000164	0.000066
16	LOGGING	0.000044	0.000050	0.000205	0.000559	0.000097	0.000122	0.000324	0.000548	0.000167
17	SAWMILLS	0.000070	0.000098	0.000163	0.000181	0.000159	0.000254	0.000310	0.000179	0.000242
18	PLYWOOD	0.000011	0.000015	0.000033	0.000043	0.000025	0.000034	0.000063	0.000046	0.000290
19	OTHER WOOD	0.000055	0.000131	0.000332	0.000086	0.000191	0.000163	0.001562	0.000051	0.000153
20	FURN&FIX	0.000002	0.000002	0.000002	0.000001	0.000004	0.000006	0.000003	0.000001	0.000119
21	PULPMILLS	0.000026	0.000014	0.000117	0.001101	0.000066	0.000070	0.000206	0.000843	0.000067
22	PAPER MLLS	0.000186	0.000139	0.001566	0.000414	0.000201	0.000227	0.000342	0.000249	0.000519
23	PAPBD MILS	0.000185	0.000093	0.000668	0.000693	0.000538	0.000567	0.001747	0.006924	0.000476
24	PRINT&PUBS	0.001061	0.000765	0.001404	0.000835	0.000946	0.001014	0.002407	0.000893	0.002732
25	INDUSSCHEM	0.000205	0.003343	0.000645	0.000324	0.000999	0.000175	0.000050	0.000205	0.000352
26	OTHER CHEM	0.001709	0.000117	0.010290	0.003540	0.000305	0.000214	0.000117	0.001230	0.000658
27	PET REFIN	0.020527	0.014241	0.004460	0.002542	0.002746	0.000623	0.000506	0.000859	0.001109
28	GLASS&STONE	0.000013	0.000050	0.003267	0.001814	0.003267	0.004293	0.000082	0.002149	0.000228
29	CEM&CLAY	0.000732	0.000163	0.001334	0.000211	0.000615	0.000515	0.000181	0.000133	0.000336
30	IRON&STEEL	0.000104	0.003397	0.149718	0.013067	0.049263	0.018407	0.003137	0.004355	0.000266
31	NONFER MET	1.222687	0.000070	0.001646	0.010820	0.008129	0.009112	0.000170	0.013797	0.000493
32	ALUMINUM	0.000013	1.013052	0.009157	0.003328	0.004746	0.002903	0.001598	0.010526	0.001803
33	HEAVY METL	0.000128	0.000070	1.026377	0.004197	0.004968	0.000230	0.000099	0.000053	0.000075
34	LITE METL	0.002100	0.000253	0.001747	1.044651	0.014059	0.004587	0.003944	0.002280	0.001041
35	NONELC EQP	0.000005	0.000002	0.000043	0.000038	1.005941	0.010749	0.000035	0.000025	0.000070
36	MACH TOOL	0.000135	0.000030	0.003619	0.003384	0.029961	1.024460	0.003022	0.002160	0.006614
37	NONELC EQP	0.000265	0.000011	0.000047	0.000046	0.008678	0.006804	1.003652	0.000040	0.000142
38	ELEC MACH	0.000060	0.000105	0.003969	0.000120	0.005151	0.004257	0.005887	1.005241	0.003417
39	AEROSPACE	0.000003	0.000022	0.000012	0.000010	0.000008	0.000002	0.000006	0.000005	1.012553
40	MOTOR VEH	0.000020	0.000024	0.000025	0.000012	0.000018	0.000012	0.000010	0.000004	1.000004
41	SHIP BLDG	0.000011	0.000022	0.000011	0.000008	0.000007	0.000002	0.000004	0.000004	0.000007
42	OTHER MFGS	0.000033	0.000027	0.000037	0.000167	0.000167	0.004249	0.002322	0.000039	0.001980
43	TRANSPORT	0.001709	0.014537	0.008229	0.006846	0.005479	0.001246	0.003671	0.003068	0.001443
44	ELEC COMPY	0.017837	0.057800	0.015845	0.011629	0.077001	0.012439	0.005912	0.006422	0.002890
45	GAS COMPY	0.027527	0.003397	0.001801	0.006252	0.000923	0.000600	0.001661	0.002711	0.000920
46	WATER SERV	0.000175	0.000154	0.000207	0.000150	0.000224	0.002813	0.000154	0.000177	0.000382
47	COMMUNICAT	0.004329	0.000842	0.004501	0.004164	0.003235	0.005116	0.003901	0.005002	0.005399
48	CONSTR	0.001346	0.001879	0.001756	0.000970	0.002997	0.004941	0.002152	0.000642	0.002117
49	WHOLESALE	0.017836	0.008025	0.026239	0.007936	0.020946	0.018820	0.016641	0.013060	0.002903
50	FINANCE	0.004156	0.003911	0.007651	0.006552	0.003001	0.004911	0.003569	0.002741	0.001099
51	INSURANCE	0.009482	0.007698	0.009381	0.009292	0.008214	0.007931	0.008183	0.007240	0.002624
52	REAL ESTATE	0.000583	0.000445	0.001110	0.000573	0.000727	0.000683	0.000692	0.000738	0.000195
53	FEDL SERV	0.001704	0.005238	0.010770	0.009062	0.004023	0.005899	0.011840	0.007711	0.004911
54	PEPS SERV	0.006081	0.004386	0.005193	0.005030	0.005069	0.005021	0.005255	0.005003	0.001248

NOT REPRODUCIBLE

	41	42	43	44	45	46	47	48	49	50
	SHIP BLDG	OTHER MFGS	TRANSPORT	ELEC COMPLY	GAS COMPLY	WATER SERV	COMMUNICAT	CONSTR	WHSLE&RET	FINANCE
1	FIELD CRAP	0.000004	0.000005	0.000118	0.000006	0.000003	0.000003	0.000004	0.000011	0.000010
2	VEGETABLES	0.000003	0.000004	0.000032	0.000008	0.000002	0.000002	0.000012	0.000013	0.000007
3	LVST&PRD	0.000007	0.000010	0.000016	0.000016	0.000005	0.000006	0.000022	0.000035	0.000019
4	OTHER AGRI	0.000015	0.000066	0.000049	0.000032	0.000020	0.000026	0.000025	0.000127	0.000016
5	FISHING	0.000001	0.000001	0.000086	0.000002	0.000000	0.000000	0.000003	0.000002	0.000002
6	MEAT PRDJS	0.000008	0.000010	0.000033	0.000020	0.000004	0.000005	0.000005	0.000030	0.000019
7	DAIRY PRD	0.000004	0.000006	0.000027	0.000009	0.000004	0.000004	0.000012	0.000021	0.000013
8	CANNIPRES	0.000015	0.000019	0.000084	0.000037	0.000007	0.000009	0.000009	0.000056	0.000034
9	GRAIN MLLS	0.000006	0.000008	0.000035	0.000012	0.000005	0.000006	0.000006	0.000018	0.000017
10	BEVERAGES	0.000003	0.000003	0.000046	0.000007	0.000000	0.000001	0.000001	0.000012	0.000009
11	OTHR FOODS	0.000021	0.000024	0.000036	0.000027	0.000016	0.000016	0.000013	0.000054	0.000088
12	TEXTILES	0.000010	0.000016	0.000010	0.000001	0.000001	0.000001	0.000001	0.000019	0.000008
13	APPAREL	0.000045	0.000063	0.000046	0.000044	0.000024	0.000026	0.000031	0.000107	0.000033
14	MINING	0.000070	0.000079	0.000240	0.000071	0.000047	0.000046	0.000065	0.027758	0.000359
15	FORESTRY	0.000036	0.000083	0.000045	0.000017	0.000013	0.000012	0.000186	0.000074	0.000293
16	LOGGING	0.000027	0.000087	0.000086	0.000045	0.000023	0.000027	0.000048	0.013146	0.000877
17	SAWMILLS	0.000158	0.000079	0.000177	0.000193	0.000077	0.000084	0.000091	0.043780	0.000751
18	PLYWOOD	0.000176	0.000119	0.000031	0.000151	0.000092	0.000113	0.000134	0.005763	0.000139
19	OTHER WOOD	0.000134	0.000232	0.000590	0.000574	0.000037	0.000039	0.000407	0.020071	0.000864
20	FURN&FIX	0.000040	0.000001	0.000034	0.000031	0.000019	0.000024	0.000024	0.001264	0.000015
21	PULPMILLS	0.000162	0.000075	0.000272	0.000053	0.000026	0.000015	0.000105	0.000291	0.000785
22	PAPER MLLS	0.000093	0.000472	0.000430	0.000163	0.000028	0.000025	0.000329	0.000713	0.002285
23	PAPER MTL	0.000127	0.000153	0.000169	0.000197	0.000127	0.000076	0.000174	0.002421	0.000572
24	PRINT&PUBS	0.000175	0.000105	0.000280	0.000458	0.000465	0.000253	0.000389	0.003175	0.025738
25	INDUS&CHEM	0.000036	0.000038	0.000046	0.000097	0.000023	0.000068	0.000067	0.000506	0.000335
26	OTHER CHEM	0.000254	0.000371	0.000377	0.000265	0.000184	0.000061	0.000201	0.004846	0.000634
27	PET REFIN	0.000186	0.000104	0.000273	0.000142	0.000034	0.000080	0.000316	0.014876	0.009220
28	GLASS&STONE	0.000076	0.000108	0.000135	0.000065	0.000044	0.000047	0.000048	0.002043	0.000170
29	CEM&CLAY	0.000258	0.000118	0.000285	0.000166	0.000104	0.000132	0.000195	0.068372	0.000815
30	IRON&STEEL	0.000409	0.000205	0.000176	0.000092	0.000337	0.000607	0.000418	0.015964	0.000301
31	NONFER MET	0.000259	0.000038	0.000277	0.000104	0.000106	0.000054	0.000082	0.001940	0.000055
32	ALUMINUM	0.000187	0.000083	0.000103	0.000068	0.000053	0.000280	0.000081	0.001925	0.000049
33	HEAVY METL	0.000259	0.000159	0.000080	0.000079	0.000071	0.000254	0.000134	0.027730	0.000654
34	LITE METL	0.000148	0.000285	0.000264	0.000219	0.000736	0.000160	0.000189	0.005679	0.000501
35	NONELC EQP	0.000268	0.000030	0.000020	0.000005	0.000003	0.000003	0.000005	0.000143	0.000014
36	MACH TOOL	0.000272	0.000232	0.000048	0.000122	0.000087	0.000090	0.000095	0.000393	0.000080
37	NONELC EQP	0.000127	0.000050	0.000047	0.000016	0.000008	0.000120	0.000020	0.000402	0.000204
38	ELEC MACH	0.000655	0.000482	0.000819	0.001261	0.000047	0.000068	0.000218	0.002070	0.000133
39	AEROSPACE	0.000009	0.000009	0.000152	0.000024	0.000001	0.000002	0.000003	0.000039	0.000020
40	MOTOR VEH	0.000019	0.000011	0.000131	0.000027	0.000004	0.000006	0.000010	0.000205	0.000500
41	SHIP BLDG	1.000121	0.000007	0.000102	0.000019	0.000001	0.000002	0.000003	0.000034	0.000018
42	OTHER MFGS	0.000264	1.000664	0.000314	0.000048	0.000031	0.000143	0.000625	0.000715	0.000479
43	TRANSPORT	0.000583	0.000620	1.000741	0.000585	0.000674	0.000152	0.000187	0.025604	0.000132
44	ELEC COMPLY	0.000407	0.000237	0.000263	1.170026	0.000359	0.000162	0.000743	0.004487	0.020312
45	GAS COMPLY	0.000128	0.000207	0.000213	0.000221	1.000132	0.000085	0.000188	0.001114	0.002788
46	WATER SERV	0.000052	0.000176	0.000124	0.000379	0.000100	1.000099	0.000146	0.000690	0.003103
47	COMMUNICAT	0.000138	0.000563	0.000596	0.000428	0.000562	0.000260	1.000097	0.024549	0.019389
48	CONSTR	0.000117	0.000096	0.000253	0.000218	0.000248	0.000128	0.000265	1.000292	0.011319
49	WHSLE&RET	0.000465	0.000886	0.000988	0.001153	0.001137	0.000187	0.000272	0.050624	1.017558
50	FINANCE	0.000281	0.000774	0.000425	0.000334	0.000453	0.000456	0.000280	0.000481	0.011873
51	INSURANCE	0.000764	0.000807	0.001747	0.000169	0.000772	0.000376	0.000795	0.000920	0.000817
52	REAL ESTATE	0.000672	0.000734	0.001260	0.000721	0.000747	0.000406	0.000193	0.001483	0.016052
53	ECOSI SERV	0.000521	0.001331	0.001362	0.001992	0.001461	0.000755	0.001442	0.028678	0.017477
54	PEPS SERV	0.000345	0.000562	0.000718	0.000580	0.000468	0.000447	0.000438	0.015207	0.012888

NOT REPRODUCIBLE

TABLE C-31. - WASHINGTON 1980 DIRECT AND INDIRECT REQUIREMENTS (Cont.)

	51	52	53	54
	INSURANCE	REA ESTATE	BLSI SERV	PERS SERV
1	FIELD CROP	C.C00005	C.C00013	C.C00011
2	VEGETABLES	C.C00005	C.C00006	C.C000293
3	LVSTK\$PROD	C.C00010	C.C00024	C.C00018
4	CTHR AGRI	C.C00006	C.C00016	C.C00013
5	FISHING	C.C00001	C.C00002	C.C00001
6	MEAT PRODS	C.C00012	C.C00023	C.C00015
7	DAIRY PROD	C.C00006	C.C00016	C.C00013
8	CANN\$PRES	C.C00022	C.C00042	C.C00028
9	GRAIN MLLS	C.C00008	C.C00022	C.C00017
10	BEVERAGES	C.C00004	C.C00006	C.C00003
11	CTHR FOODS	C.C00022	C.C00066	C.C00054
12	TEXTILES	C.C00001	C.C00002	C.C00006
13	APPAREL	C.C00021	C.C00016	C.C000576
14	MINING	C.C00125	C.C002207	C.C00143
15	FORESTRY	C.C00073	C.C000587	C.C000079
16	LOGGING	C.C00216	C.C01401	C.C00230
17	SAWMILLS	C.C000219	C.C003546	C.C000255
18	PLYWOOD	C.C00039	C.C000490	C.C000045
19	CTHR WOOD	C.C000127	C.C001644	C.C00127
20	FURN\$FIX	C.C00005	C.C000099	C.C000006
21	PULPMILLS	C.C000115	C.C000190	C.C000079
22	PAPER MLLS	C.C001856	C.C004992	C.C002250
23	PAPBD MILS	C.C000581	C.C000510	C.C000172
24	PRINT\$PUBS	C.C016084	C.C057367	C.C019142
25	INDUS\$CHEM	C.C000175	C.C001167	C.C000165
26	CTHR CHEM	C.C000346	C.C002393	C.C000412
27	PET REFIN	C.C000938	C.C019762	C.C002448
28	GLAS\$STONE	C.C000011	C.C000169	C.C000017
29	CEM\$CLAY	C.C000274	C.C0005371	C.C000325
30	IRON\$STEEL	C.C000081	C.C001303	C.C000249
31	NONFER MET	C.C000014	C.C000202	C.C000019
32	ALUMINUM	C.C000010	C.C000162	C.C000032
33	HEAVY METL	C.C000148	C.C002289	C.C001255
34	LITE METL	C.C000118	C.C000881	C.C000172
35	NONELC EQP	C.C000002	C.C000015	C.C000003
36	MACH TOOL	C.C000028	C.C000339	C.C000041
37	NONELC F&P	C.C000010	C.C000053	C.C000012
38	ELEC MACH	C.C000042	C.C000255	C.C000075
39	AEROSPACE	C.C000013	C.C000018	C.C000008
40	MOTOR VEH	C.C000014	C.C000044	C.C000013
41	SHIP BLDG	C.C000009	C.C000021	C.C000006
42	CTHR MFGS	C.C000051	C.C000181	C.C000615
43	TRANSPORT	C.C008424	C.C011729	C.C004548
44	ELEC COMPY	C.C001574	C.C035459	C.C003464
45	GAS COMPY	C.C002683	C.C013206	C.C001941
46	WATER SERV	C.C002719	C.C018731	C.C002283
47	COMMUNICAT	C.C005823	C.C011846	C.C019280
48	CONSTR	C.C003810	C.C078491	C.C004490
49	WHSLES&RET	C.C010056	C.C025221	C.C013916
50	FINANCE	C.C07128	C.C011809	C.C007173
51	INSURANCE	C.C048577	C.C018421	C.C008782
52	REA ESTATE	C.C014538	C.C054287	C.C012954
53	BLSI SERV	C.C024104	C.C050497	C.C059201
54	PERS SERV	C.C004834	C.C015603	C.C014179

NOT REPRODUCIBLE

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS

	1	2	3	4	5	6	7	8	9	10
1	1.044361	0.008661	0.070331	0.007797	0.010804	0.038962	0.040760	0.011012	0.227116	0.020710
2	0.004532	1.006022	0.003655	0.005429	0.007517	0.003376	0.004695	0.214087	0.003540	0.010548
3	0.033673	0.044865	1.104286	0.040369	0.048436	0.506613	0.578392	0.039994	0.028460	0.036630
4	0.000965	0.007958	0.001231	1.008608	0.001154	0.000990	0.001246	0.002539	0.004020	0.001267
5	0.000627	0.000835	0.000510	0.000751	1.005536	0.000470	0.000649	0.046848	0.000559	0.030683
6	0.021591	0.039433	0.025141	0.035480	0.045758	1.057686	0.030985	0.037083	0.034164	0.032079
7	0.021497	0.036676	0.024878	0.032972	0.039076	0.022789	1.193557	0.031559	0.016134	0.030323
8	0.007048	0.009400	0.006059	0.008456	0.017558	0.005518	0.007564	1.019955	0.008407	0.007954
9	0.003510	0.012665	0.154855	0.011401	0.018041	0.094463	0.084676	0.016342	1.032427	0.010888
10	0.012457	0.016578	0.015367	0.014931	0.020186	0.011538	0.016234	0.013974	0.007246	1.069416
11	0.024110	0.032113	0.023138	0.028905	0.039234	0.022593	0.035614	0.047175	0.022556	0.035435
12	0.000753	0.001074	0.001038	0.000929	0.027088	0.000841	0.001063	0.002194	0.003610	0.001095
13	0.006051	0.008750	0.006654	0.007243	0.012159	0.005549	0.007114	0.007155	0.017536	0.006601
14	0.009333	0.012099	0.007316	0.010794	0.009328	0.007031	0.010435	0.012018	0.006143	0.015595
15	0.002269	0.004188	0.001876	0.002998	0.002831	0.001933	0.002911	0.003712	0.001860	0.004520
16	0.004984	0.010301	0.004204	0.006971	0.006365	0.004497	0.006850	0.009073	0.004547	0.011034
17	0.013314	0.019141	0.010705	0.015896	0.014615	0.010351	0.015309	0.017980	0.009115	0.022490
18	0.002639	0.003913	0.002113	0.003188	0.003058	0.002057	0.003043	0.003609	0.001815	0.004438
19	0.007319	0.017064	0.005874	0.008627	0.016581	0.005735	0.008797	0.011833	0.004917	0.015359
20	0.003834	0.005176	0.002997	0.004596	0.004374	0.002876	0.004172	0.004778	0.002431	0.005515
21	0.000979	0.006339	0.001224	0.003439	0.001309	0.002145	0.003595	0.006088	0.003143	0.007122
22	0.007405	0.018410	0.006071	0.009440	0.008963	0.005991	0.008635	0.011643	0.006226	0.011966
23	0.006954	0.052008	0.009449	0.028348	0.009522	0.017655	0.029919	0.051368	0.026473	0.060489
24	0.023922	0.031583	0.019069	0.028557	0.029553	0.018093	0.025412	0.028101	0.014635	0.039159
25	0.002904	0.005138	0.001228	0.002133	0.001919	0.001277	0.004398	0.002883	0.001452	0.002511
26	0.017232	0.035634	0.004494	0.005386	0.007577	0.003966	0.005538	0.012736	0.007012	0.009223
27	0.063492	0.054480	0.044012	0.052567	0.079713	0.033946	0.049412	0.046156	0.028858	0.046788
28	0.002253	0.002497	0.001704	0.005934	0.002449	0.001494	0.006535	0.008796	0.001279	0.043416
29	0.022880	0.028444	0.017231	0.025290	0.021964	0.016445	0.024147	0.027620	0.014482	0.034513
30	0.006197	0.008121	0.004934	0.007150	0.006622	0.004798	0.007069	0.008914	0.004095	0.011234
31	0.000869	0.001220	0.000620	0.000885	0.000925	0.000646	0.000858	0.001770	0.000539	0.002052
32	0.007420	0.005313	0.001522	0.001677	0.001659	0.001311	0.001831	0.002823	0.002236	0.002675
33	0.009893	0.013075	0.007887	0.011626	0.010163	0.007590	0.011946	0.013092	0.006554	0.017774
34	0.005931	0.007810	0.005137	0.006891	0.008018	0.010416	0.006695	0.080232	0.004157	0.091894
35	0.006221	0.008525	0.004920	0.007490	0.006783	0.004825	0.007179	0.008444	0.004202	0.010612
36	0.002239	0.003143	0.001770	0.002628	0.002408	0.001741	0.002548	0.003588	0.001518	0.003933
37	0.002628	0.003697	0.002097	0.003189	0.002849	0.002077	0.003118	0.005318	0.001849	0.005419
38	0.002067	0.002717	0.001615	0.002470	0.006834	0.001541	0.002218	0.002716	0.001294	0.002860
39	0.001189	0.000253	0.000159	0.000228	0.000216	0.000181	0.000260	0.000292	0.000147	0.000342
40	0.003003	0.001835	0.002208	0.001049	0.001087	0.001361	0.001718	0.001199	0.001012	0.001116
41	0.002851	0.003814	0.002206	0.003416	0.020836	0.002102	0.002975	0.004123	0.001723	0.003460
42	0.003263	0.004475	0.002521	0.003875	0.008297	0.002444	0.003558	0.004328	0.002098	0.004745
43	0.052264	0.067519	0.047498	0.063616	0.066107	0.063472	0.087140	0.092632	0.047505	0.095830
44	0.062971	0.070370	0.044900	0.062411	0.059042	0.041076	0.057950	0.062455	0.037166	0.061353
45	0.007905	0.011039	0.006809	0.009671	0.009901	0.010232	0.014358	0.015364	0.009276	0.012797
46	0.014754	0.020372	0.009324	0.021704	0.014746	0.010900	0.013696	0.019388	0.007673	0.016978
47	0.040489	0.054568	0.033527	0.068900	0.047876	0.032322	0.043007	0.046062	0.024014	0.052584
48	0.277831	0.366122	0.222671	0.325650	0.277504	0.212788	0.313411	0.359018	0.184621	0.453392
49	0.369060	0.476771	0.296216	0.435913	0.459704	0.287907	0.403715	0.430513	0.223984	0.419390
50	0.054496	0.070796	0.041388	0.073688	0.064249	0.040480	0.054313	0.064757	0.036093	0.060326
51	0.053513	0.068335	0.044476	0.062951	0.065862	0.040624	0.055796	0.062173	0.035448	0.060161
52	0.027444	0.035933	0.021184	0.032823	0.033734	0.020123	0.028195	0.030799	0.016339	0.030229
53	0.064843	0.055411	0.034974	0.066882	0.079577	0.041415	0.060502	0.061231	0.045000	0.064315
54	0.158448	0.209161	0.123532	0.191179	0.190319	0.116266	0.163336	0.175309	0.093805	0.169611
55	1.064864	1.415244	0.815039	1.275731	1.325811	0.761543	1.061043	1.167836	0.611943	1.118356
56	0.350843	0.471554	0.268840	0.422046	0.436731	0.250231	0.348287	0.382325	0.200939	0.367223
57	0.417497	0.574287	0.331654	0.503195	0.442731	0.327385	0.491231	0.581918	0.288016	0.751890

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS (Cont.)

	11	12	13	14	15	16	17	18	19	20
1	0.149292	0.004093	0.004934	0.005948	0.008848	0.007949	0.007766	0.006218	0.005738	0.007053
2	0.010463	0.002720	0.003441	0.003931	0.005740	0.005184	0.005127	0.004067	0.003732	0.004981
3	0.055171	0.021224	0.025376	0.030916	0.045851	0.041127	0.040227	0.032169	0.029627	0.036519
4	0.001477	0.000744	0.000923	0.000953	0.001250	0.001098	0.001121	0.000944	0.000756	0.001052
5	0.000981	0.000395	0.000481	0.000577	0.000854	0.000772	0.000756	0.000603	0.000556	0.000682
6	0.034548	0.018784	0.022764	0.027390	0.040725	0.036552	0.035704	0.028572	0.026339	0.032051
7	0.039413	0.017533	0.021295	0.025739	0.037980	0.033970	0.033256	0.026568	0.024405	0.029770
8	0.014136	0.004503	0.005480	0.006692	0.009747	0.008847	0.008703	0.006897	0.006324	0.007702
9	0.024526	0.006001	0.007286	0.008719	0.012996	0.011689	0.011409	0.009138	0.008438	0.010309
10	0.017821	0.007842	0.009465	0.011277	0.017030	0.015353	0.014916	0.011987	0.011122	0.013482
11	0.065905	0.015284	0.018516	0.022266	0.033154	0.029763	0.029047	0.023279	0.021491	0.026099
12	0.001274	0.000522	0.000905	0.000845	0.001121	0.000977	0.000987	0.000766	0.000668	0.000819
13	0.007842	0.003917	0.005702	0.005751	0.008583	0.008581	0.007716	0.006143	0.005659	0.006562
14	0.016134	0.006294	0.008154	0.0125895	0.013187	0.011173	0.012151	0.009107	0.007444	0.009532
15	0.004074	0.001561	0.002104	0.002711	0.030160	0.299207	0.123719	0.066718	0.049701	0.014099
16	0.005723	0.003459	0.004757	0.005983	0.007145	0.057573	0.257514	0.150908	0.123174	0.030619
17	0.020124	0.009130	0.011955	0.016366	0.019194	0.016163	0.064027	0.035543	0.029147	0.094835
18	0.004002	0.001833	0.002392	0.003223	0.003870	0.003278	0.003468	0.054889	0.030262	0.028881
19	0.011523	0.004998	0.006474	0.009011	0.010544	0.009306	0.009929	0.007304	0.027434	0.025601
20	0.005230	0.002687	0.003349	0.004470	0.005775	0.004951	0.005081	0.003899	0.003348	0.016556
21	0.005969	0.000758	0.001426	0.001034	0.001321	0.001211	0.001225	0.001103	0.001059	0.003182
22	0.014738	0.005105	0.007777	0.007809	0.010519	0.009440	0.009675	0.007701	0.006895	0.008610
23	0.049583	0.005534	0.010843	0.007349	0.009262	0.008535	0.008610	0.007987	0.007787	0.026253
24	0.044360	0.015415	0.018062	0.023160	0.032545	0.030119	0.031862	0.025285	0.023333	0.025958
25	0.002536	0.005578	0.001213	0.001441	0.001798	0.001661	0.001699	0.003941	0.006367	0.003037
26	0.009404	0.008736	0.006134	0.004864	0.006316	0.005771	0.006484	0.051948	0.006737	0.029575
27	0.052824	0.022205	0.026590	0.061968	0.046439	0.049012	0.050891	0.035727	0.038722	0.040865
28	0.007175	0.001341	0.001500	0.001914	0.002540	0.002250	0.002265	0.001853	0.004399	0.002086
29	0.031459	0.014681	0.019063	0.050604	0.030950	0.026051	0.028835	0.021933	0.017765	0.022311
30	0.009075	0.004219	0.005493	0.009625	0.008849	0.007719	0.008158	0.006051	0.005997	0.011501
31	0.001122	0.001141	0.000692	0.001008	0.001075	0.000964	0.001032	0.001104	0.000681	0.001014
32	0.002955	0.001031	0.001296	0.001834	0.002106	0.001796	0.001901	0.001433	0.001959	0.012765
33	0.014536	0.006807	0.008860	0.014288	0.014328	0.012458	0.012976	0.009636	0.008486	0.010233
34	0.009235	0.004001	0.006555	0.008640	0.008170	0.008624	0.009040	0.006073	0.008278	0.007528
35	0.009633	0.004611	0.005934	0.008320	0.009741	0.009760	0.009065	0.007216	0.005432	0.006876
36	0.003373	0.002043	0.002040	0.007167	0.003282	0.004129	0.005087	0.003850	0.002867	0.022747
37	0.004973	0.001959	0.002546	0.013692	0.004088	0.005051	0.005205	0.004602	0.002542	0.003090
38	0.002721	0.001409	0.001712	0.002498	0.002991	0.002676	0.002742	0.002108	0.001831	0.002226
39	0.000321	0.000130	0.000157	0.000257	0.000273	0.000343	0.000372	0.000247	0.000213	0.000262
40	0.001405	0.000580	0.000696	0.000981	0.001271	0.001623	0.001315	0.000995	0.000905	0.000991
41	0.003474	0.001950	0.002302	0.003027	0.004304	0.003885	0.003830	0.003015	0.002736	0.003082
42	0.004899	0.002557	0.002813	0.003766	0.004706	0.004073	0.004231	0.003411	0.002776	0.011433
43	0.095678	0.031117	0.039050	0.070051	0.065605	0.133533	0.145021	0.089421	0.082218	0.093730
44	0.061738	0.032171	0.039834	0.058352	0.069526	0.063019	0.074106	0.056197	0.050975	0.057117
45	0.016486	0.005191	0.006225	0.012057	0.011292	0.010314	0.011312	0.009208	0.008943	0.011432
46	0.016874	0.007675	0.009078	0.011393	0.016935	0.015422	0.014994	0.013162	0.011311	0.012695
47	0.049264	0.030582	0.031071	0.036629	0.049764	0.048634	0.048604	0.039403	0.034191	0.044208
48	0.409284	0.190305	0.248899	0.344347	0.400052	0.334360	0.359157	0.266061	0.214415	0.284003
49	0.433314	0.228823	0.277970	0.364242	0.499670	0.480562	0.487691	0.382644	0.365068	0.417797
50	0.062139	0.040499	0.041183	0.053825	0.076829	0.067102	0.065364	0.052790	0.047427	0.055257
51	0.061453	0.039008	0.042753	0.055972	0.075324	0.065604	0.067438	0.054795	0.052219	0.058569
52	0.031314	0.017695	0.021039	0.026689	0.038615	0.035208	0.034694	0.027817	0.025915	0.029517
53	0.071002	0.024022	0.037991	0.051143	0.052183	0.049361	0.058907	0.047831	0.044704	0.043236
54	0.177531	0.100039	0.122247	0.151999	0.218326	0.202874	0.198428	0.161451	0.150900	0.173144
55	1.173837	0.647773	0.804486	0.925665	1.380024	1.242235	1.217084	0.973590	0.899445	1.161343
56	0.385602	0.273874	0.276627	0.401577	0.652484	0.585696	0.543791	0.450230	0.427090	0.355850
57	0.673652	0.313842	0.409976	0.575691	0.658760	0.541156	0.586685	0.430425	0.341724	0.459783

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS (CONC.)

	21	22	23	24	25	26	27	28	29	30
1	0.007352	0.007097	0.006385	0.007374	0.007523	0.004290	0.002691	0.007039	0.006880	0.007323
2	0.005056	0.004959	0.004468	0.005060	0.004896	0.002827	0.001850	0.004765	0.004799	0.004844
3	0.0038166	0.0036955	0.003240	0.0038128	0.0039189	0.002256	0.0014048	0.0036596	0.0035643	0.0038026
4	0.001156	0.001204	0.001033	0.001089	0.001276	0.002414	0.000507	0.001173	0.001005	0.001155
5	0.0007714	0.000689	0.000620	0.000711	0.000731	0.000415	0.000263	0.000683	0.000668	0.000709
6	0.0033637	0.0032463	0.0029136	0.0033576	0.0034785	0.0019723	0.0012375	0.0032301	0.0031367	0.0033679
7	0.0031454	0.0030541	0.0027450	0.0031250	0.0032826	0.0018470	0.0011745	0.0030351	0.0029169	0.0031595
8	0.0008196	0.0007937	0.0007148	0.0008059	0.0008525	0.0004780	0.0003106	0.0007879	0.0007614	0.0008182
9	0.0010758	0.0010362	0.0009322	0.0010796	0.0011033	0.0006293	0.0003933	0.0010301	0.0010070	0.0010732
10	0.0013967	0.0013340	0.0012020	0.0014084	0.0014216	0.0008178	0.0004990	0.0013306	0.0013149	0.0013919
11	0.0027341	0.0026344	0.0023697	0.0027427	0.0028229	0.0016058	0.0010031	0.0026252	0.0025513	0.0027409
12	0.0000968	0.0001019	0.0002177	0.0000883	0.0001137	0.000601	0.000434	0.0001079	0.0000861	0.0001012
13	0.0007137	0.0006687	0.0006013	0.0006896	0.0007364	0.0004164	0.0002565	0.0006701	0.0006414	0.0007064
14	0.0016142	0.0016171	0.0012337	0.0010529	0.0019261	0.0007713	0.0006600	0.0032404	0.0021534	0.0019531
15	0.0075153	0.004438	0.0020027	0.004392	0.003716	0.002061	0.001564	0.004534	0.003095	0.003305
16	0.0253632	0.0078125	0.0064426	0.011759	0.008179	0.004870	0.003464	0.011611	0.007390	0.007326
17	0.0067131	0.0041290	0.0031820	0.006856	0.0022773	0.0010884	0.000590	0.0020275	0.0015939	0.0019565
18	0.0003922	0.0010810	0.0007153	0.0003617	0.0004462	0.002180	0.001851	0.004076	0.002999	0.003862
19	0.0011063	0.0011284	0.0010460	0.0008330	0.0012389	0.0005863	0.0005607	0.0010533	0.0008310	0.0012090
20	0.0005028	0.0005311	0.0004764	0.0004483	0.0006078	0.0003017	0.0002360	0.0005210	0.0004229	0.0005325
21	0.013246	0.009360	0.0121088	0.003627	0.001241	0.002404	0.000514	0.010076	0.004284	0.001338
22	0.010016	0.009964	0.0037991	0.004165	0.010030	0.007998	0.004120	0.017204	0.011195	0.009630
23	0.008690	0.0022664	0.007451	0.010017	0.008668	0.019480	0.003594	0.005508	0.003436	0.009622
24	0.0027971	0.0026511	0.0024285	0.002140	0.002384	0.0020243	0.0010584	0.0045005	0.0026912	0.0029202
25	0.0058444	0.0011506	0.0012550	0.003259	0.002302	0.0057274	0.0005649	0.003408	0.002054	0.001699
26	0.0012133	0.0011731	0.0011076	0.0022839	0.0017082	0.003098	0.002912	0.0024832	0.0006356	0.007527
27	0.0056525	0.0051723	0.0048905	0.0038918	0.0050789	0.0032141	0.0026387	0.0042167	0.0086642	0.0043066
28	0.0002240	0.0002246	0.0002025	0.0002082	0.0002498	0.0003196	0.000950	0.002224	0.0002098	0.0015820
29	0.0047297	0.0033181	0.0030931	0.004320	0.0036532	0.0017120	0.0015201	0.0036317	0.00149188	0.0039302
30	0.000877	0.0009690	0.0008982	0.0006976	0.0011553	0.0005123	0.0004594	0.0009007	0.0015051	0.0027716
31	0.0002341	0.0001207	0.0001199	0.0001008	0.0001382	0.0008095	0.000590	0.001227	0.0002563	0.0004991
32	0.0002324	0.0002239	0.0002031	0.0001671	0.0007763	0.001553	0.001086	0.002095	0.001749	0.002152
33	0.0015559	0.0015306	0.0013681	0.0011240	0.0017861	0.0008008	0.0007538	0.0014388	0.0015778	0.0014513
34	0.0009945	0.0009094	0.0008030	0.0009036	0.0009412	0.0006491	0.0008135	0.0007747	0.0012477	0.0009242
35	0.0009390	0.0010123	0.0009066	0.0007460	0.0011543	0.0005432	0.0004721	0.0009656	0.0008357	0.0009675
36	0.0004644	0.0003645	0.0003347	0.0002707	0.0003987	0.0007598	0.001656	0.0003529	0.0011762	0.0004876
37	0.000057	0.0007218	0.0005804	0.0003389	0.0006875	0.0002468	0.0002072	0.0004495	0.0005263	0.0004207
38	0.0003592	0.0003021	0.0002583	0.0002373	0.0003575	0.0001637	0.0002360	0.0002715	0.0005794	0.0007219
39	0.0000331	0.0000313	0.0000290	0.0000226	0.0000329	0.000161	0.000159	0.0000294	0.0000312	0.0000291
40	0.0001243	0.0001088	0.0000987	0.0001009	0.0001184	0.0000643	0.0000820	0.0001070	0.00003287	0.0001143
41	0.0003505	0.0003411	0.0003069	0.0003309	0.0003963	0.0002123	0.0001794	0.0003464	0.0003154	0.0003652
42	0.0005304	0.0004856	0.0005086	0.0004721	0.0006740	0.0006569	0.0002146	0.0004523	0.0003654	0.0004446
43	0.0011535	0.00084177	0.00081754	0.00062131	0.0007265	0.00042240	0.00046147	0.00076966	0.00123029	0.00075791
44	0.001353	0.0012458	0.00063614	0.00061917	0.0008738	0.00039619	0.00028854	0.00072970	0.0004481	0.00031094
45	0.001440	0.0009073	0.0009954	0.0012439	0.0010017	0.0005984	0.0004344	0.0003602	0.0015541	0.0002013
46	0.0019856	0.0014192	0.0013125	0.0013802	0.0014320	0.0008257	0.0006073	0.0013176	0.0013726	0.0014013
47	0.0045233	0.0043342	0.0039228	0.0049786	0.0045874	0.0026442	0.0017464	0.0045234	0.0043693	0.0047062
48	0.0039070	0.0022807	0.00179565	0.00312458	0.0023305	0.0022035	0.0020354	0.003659	0.0029796	0.0037980
49	0.0046716	0.00411242	0.00377419	0.00413630	0.00437306	0.0025845	0.00150857	0.00411581	0.00409484	0.00475506
50	0.00062630	0.00060647	0.00056287	0.00061121	0.00062313	0.00039902	0.00023979	0.00060218	0.00063207	0.00064219
51	0.00063811	0.00060955	0.00055646	0.00061103	0.00059861	0.00040287	0.00026483	0.00062751	0.00060984	0.00063046
52	0.00131744	0.00100039	0.00027184	0.00131935	0.00133281	0.0019122	0.0011897	0.0010709	0.00029379	0.00034462
53	0.0005057	0.00049192	0.00045657	0.00052357	0.00051384	0.0002481	0.00024474	0.0004737	0.00047714	0.00057960
54	0.00181399	0.00170431	0.00154068	0.00213042	0.00197121	0.00113158	0.00074989	0.00178782	0.00171257	0.00193748
55	0.0178859	0.0143125	0.0099100	0.0190792	0.0154584	0.0070231	0.00421757	0.0112956	0.0119235	0.0144049
56	0.00421547	0.00364924	0.00325969	0.00426208	0.00534787	0.00294734	0.00147798	0.00426980	0.00374340	0.00453346
57	0.0020150	0.001705282	0.00132051	0.00150382	0.0012780	0.00070182	0.00038538	0.00074491	0.000483616	0.000669496

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS (Cont.)

	31	32	33	34	35	36	37	38	39	40
1	0.003531	0.004175	0.006874	0.004130	0.006389	0.005837	0.008070	0.004970	0.004873	0.007119
2	0.002417	0.002871	0.004828	0.002983	0.004537	0.004170	0.005775	0.003315	0.003654	0.004822
3	0.0018309	0.021759	0.003743	0.021670	0.033235	0.030264	0.042059	0.025745	0.025216	0.037035
4	0.000533	0.000720	0.001122	0.000623	0.001039	0.000865	0.001379	0.000709	0.000667	0.001155
5	0.000341	0.000406	0.000665	0.000403	0.000618	0.000562	0.000781	0.000480	0.000468	0.000689
6	0.016129	0.019158	0.031361	0.018970	0.029107	0.026484	0.036782	0.022774	0.021894	0.032677
7	0.015065	0.018072	0.029411	0.017663	0.027305	0.024662	0.034638	0.021220	0.020227	0.030703
8	0.003875	0.004703	0.007586	0.004537	0.007037	0.006315	0.008943	0.005449	0.005142	0.007927
9	0.005166	0.006101	0.010033	0.006100	0.009317	0.008515	0.011755	0.007287	0.007090	0.010416
10	0.006725	0.007833	0.012977	0.007955	0.012039	0.011109	0.015104	0.009537	0.009321	0.013473
11	0.013140	0.015540	0.025483	0.015439	0.023644	0.021557	0.029840	0.018554	0.017828	0.026541
12	0.000447	0.000617	0.000917	0.000506	0.000852	0.000697	0.001137	0.000622	0.000575	0.001001
13	0.003316	0.004235	0.006372	0.003814	0.005875	0.005348	0.007415	0.004742	0.004274	0.006784
14	0.0031860	0.008754	0.013001	0.006206	0.011759	0.008608	0.015672	0.007554	0.005050	0.013707
15	0.001351	0.002100	0.002943	0.001608	0.002719	0.002055	0.003816	0.001929	0.001345	0.003482
16	0.002972	0.004640	0.006508	0.003709	0.005980	0.004517	0.008432	0.004409	0.002959	0.007675
17	0.008011	0.012663	0.017558	0.008670	0.016401	0.012062	0.022934	0.010608	0.007425	0.020552
18	0.001599	0.002477	0.003458	0.001748	0.003228	0.002408	0.004490	0.002149	0.001772	0.006106
19	0.004400	0.007962	0.009784	0.004757	0.009013	0.006656	0.013806	0.005801	0.004178	0.010585
20	0.002310	0.003286	0.004809	0.002522	0.004467	0.003517	0.006010	0.003148	0.002492	0.006340
21	0.000546	0.000704	0.001140	0.001669	0.001016	0.000892	0.001435	0.001519	0.000707	0.001279
22	0.004278	0.005474	0.009602	0.004991	0.007728	0.006611	0.010138	0.008010	0.005282	0.008984
23	0.003843	0.004969	0.007872	0.013661	0.007206	0.006374	0.010361	0.011617	0.005040	0.009253
24	0.013424	0.015853	0.025175	0.014964	0.022841	0.020679	0.030098	0.018544	0.018359	0.026234
25	0.000931	0.003001	0.001991	0.001119	0.001993	0.001279	0.001685	0.001166	0.001168	0.001701
26	0.004686	0.003479	0.015078	0.006671	0.004947	0.004007	0.006273	0.004621	0.003345	0.008201
27	0.0039034	0.039317	0.040706	0.022986	0.036415	0.029339	0.044609	0.026373	0.022664	0.041272
28	0.001029	0.001374	0.005272	0.002800	0.004443	0.005554	0.002586	0.003270	0.001420	0.004111
29	0.013521	0.020476	0.029314	0.013923	0.026710	0.019573	0.036446	0.016972	0.012037	0.031356
30	0.003780	0.007530	0.0157978	0.017204	0.056602	0.023610	0.013629	0.008884	0.003541	0.067330
31	1.323552	0.001833	0.002212	0.011137	0.008407	0.009015	0.001391	0.014845	0.000903	0.005809
32	0.000883	1.013943	0.011069	0.004134	0.005622	0.004682	0.004086	0.012018	0.002595	0.020936
33	0.006055	0.009379	1.039535	0.010843	0.016748	0.009033	0.017024	0.007838	0.005408	0.026707
34	0.005463	0.005102	0.008396	1.048022	0.020196	0.009332	0.012368	0.006266	0.004644	0.021139
35	0.004018	0.006296	0.008833	0.004301	1.013721	0.017133	0.011458	0.005308	0.003627	0.009662
36	0.001499	0.002154	0.006895	0.004493	0.032432	1.026407	0.006892	0.003811	0.007844	0.033477
37	0.001971	0.003282	0.003825	0.001853	0.012443	0.009984	1.008305	0.002265	0.001623	0.004170
38	0.001233	0.001748	0.006068	0.001383	0.006988	0.005678	0.008525	1.006538	0.004594	0.005541
39	0.000114	0.000189	0.000252	0.000131	0.000231	0.000170	0.000312	0.000153	1.012670	0.000269
40	0.000506	0.000639	0.000976	0.000554	0.000893	0.000767	0.001139	0.000701	0.000567	1.006474
41	0.001637	0.002080	0.003174	0.001797	0.002910	0.002493	0.003734	0.002331	0.001821	0.003475
42	0.001943	0.002763	0.004108	0.002167	0.003928	0.007807	0.007397	0.002616	0.003994	0.005525
43	0.027454	0.047631	0.059830	0.035989	0.052712	0.041673	0.065501	0.038868	0.031852	0.060539
44	0.044069	0.091327	0.066858	0.041147	0.053736	0.053709	0.065935	0.044024	0.034604	0.059757
45	0.032362	0.008311	0.010044	0.011219	0.008505	0.007317	0.011309	0.008721	0.006121	0.009876
46	0.006539	0.007605	0.012215	0.007355	0.011243	0.013321	0.013898	0.009397	0.008330	0.013063
47	0.023204	0.025578	0.041563	0.025647	0.037596	0.035178	0.048297	0.031068	0.029649	0.042530
48	0.167665	0.265780	0.368986	0.178191	0.345888	0.251238	0.481970	0.218272	0.149238	0.406462
49	0.210185	0.236178	0.395058	0.228322	0.360685	0.325914	0.445499	0.288300	0.248217	0.402469
50	0.030554	0.035188	0.058508	0.036618	0.049542	0.046278	0.062672	0.040313	0.033794	0.058798
51	0.034572	0.038526	0.057595	0.037495	0.052965	0.046836	0.064544	0.042512	0.033434	0.059852
52	0.015318	0.017912	0.029074	0.017201	0.026446	0.023832	0.033113	0.023609	0.018468	0.030672
53	0.026741	0.021552	0.050497	0.031052	0.040694	0.036138	0.060376	0.034441	0.027485	0.058342
54	0.089347	0.102676	0.163331	0.100448	0.149979	0.137332	0.186883	0.124765	0.107556	0.172212
55	0.567792	0.663285	1.117755	0.692951	1.046245	0.969034	1.321792	0.789070	0.843205	1.128492
56	0.205417	0.232252	0.344517	0.194312	0.298729	0.269013	0.353441	0.328294	0.158067	0.430576
57	0.275369	0.445751	0.613916	0.290978	0.574277	0.404858	0.808936	0.357457	0.232912	0.675170

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS (Cont.)

	41	42	43	44	45	46	47	48	49	50
1	0.003317	0.007678	0.005641	0.005071	0.005399	0.003427	0.006784	0.006226	0.009561	0.009550
2	0.002338	0.005387	0.004032	0.003318	0.003280	0.002175	0.004387	0.004298	0.006797	0.006887
3	0.017134	0.039918	0.029185	0.026379	0.026499	0.017757	0.035201	0.032172	0.049073	0.049566
4	0.000502	0.001280	0.000773	0.000854	0.000816	0.000520	0.001034	0.002117	0.001364	0.001467
5	0.000320	0.000742	0.000619	0.000492	0.000494	0.000331	0.000656	0.000600	0.000913	0.000921
6	0.015082	0.035030	0.026358	0.023401	0.023557	0.015821	0.031275	0.028330	0.042919	0.043309
7	0.014051	0.032827	0.023776	0.022027	0.022135	0.014787	0.029276	0.026231	0.039861	0.040406
8	0.003611	0.008456	0.007917	0.005725	0.005717	0.003810	0.007541	0.006744	0.010219	0.010379
9	0.004844	0.011210	0.008460	0.007437	0.007487	0.005039	0.009962	0.009114	0.013872	0.013922
10	0.005317	0.014518	0.011137	0.009607	0.009711	0.006586	0.012986	0.011994	0.018089	0.018099
11	0.012278	0.028460	0.020788	0.019010	0.019153	0.012887	0.025451	0.023110	0.035597	0.035225
12	0.000410	0.002589	0.000651	0.000739	0.000725	0.000454	0.000912	0.000704	0.001077	0.001160
13	0.003501	0.013899	0.005772	0.004964	0.005015	0.003393	0.006636	0.006828	0.008606	0.008669
14	0.005408	0.013156	0.009150	0.010637	0.009867	0.006195	0.011966	0.034982	0.012398	0.014480
15	0.001530	0.003955	0.002188	0.002539	0.002366	0.001464	0.002935	0.007915	0.003309	0.003591
16	0.003401	0.008852	0.004911	0.005608	0.005208	0.003220	0.006523	0.017169	0.007479	0.007932
17	0.003486	0.023957	0.011798	0.015505	0.014399	0.008836	0.017384	0.054281	0.018261	0.021109
18	0.003154	0.003876	0.002368	0.002988	0.002809	0.001716	0.003421	0.007923	0.003688	0.004191
19	0.005136	0.012616	0.011544	0.008381	0.007765	0.004766	0.009393	0.025918	0.010542	0.011541
20	0.002451	0.005293	0.003260	0.003958	0.003851	0.002381	0.004781	0.004691	0.005397	0.005966
21	0.000637	0.001831	0.001000	0.000854	0.000823	0.000536	0.001138	0.001155	0.002102	0.001496
22	0.004385	0.013651	0.006618	0.007710	0.006870	0.004417	0.011449	0.007350	0.015095	0.012860
23	0.004631	0.013059	0.007326	0.005772	0.005696	0.003727	0.007416	0.008536	0.015126	0.010265
24	0.013089	0.027591	0.022670	0.023147	0.023088	0.014958	0.028707	0.024602	0.057645	0.057726
25	0.000996	0.001881	0.001615	0.001195	0.001118	0.004749	0.001482	0.001650	0.002062	0.001929
26	0.007491	0.009232	0.006914	0.004353	0.004214	0.003210	0.005294	0.008687	0.006559	0.006920
27	0.017737	0.041567	0.080144	0.034030	0.029028	0.019224	0.039956	0.044504	0.054620	0.050547
28	0.001654	0.002380	0.001624	0.001675	0.001634	0.001060	0.002077	0.003648	0.002679	0.002697
29	0.013668	0.030659	0.018496	0.024767	0.023069	0.014183	0.028377	0.085413	0.029149	0.033914
30	0.023704	0.011531	0.006415	0.007506	0.006698	0.004311	0.008012	0.020809	0.008347	0.009687
31	0.003387	0.001438	0.000828	0.001876	0.000860	0.000500	0.000996	0.002540	0.001042	0.001174
32	0.000946	0.020832	0.001207	0.001636	0.001551	0.001176	0.001880	0.003081	0.001977	0.002288
33	0.007749	0.014364	0.008252	0.011491	0.010738	0.008343	0.013332	0.035539	0.013701	0.015703
34	0.009115	0.031715	0.007257	0.007624	0.012946	0.003495	0.006836	0.010684	0.008377	0.008807
35	0.005952	0.009623	0.005087	0.007333	0.006996	0.004071	0.008377	0.005426	0.008906	0.010352
36	0.003839	0.005568	0.002669	0.002582	0.002432	0.001457	0.002908	0.005675	0.003068	0.003575
37	0.002750	0.004170	0.002141	0.003158	0.002991	0.001811	0.003564	0.002586	0.003881	0.004424
38	0.007713	0.007136	0.002468	0.003211	0.002004	0.001302	0.005100	0.003784	0.002852	0.003068
39	0.000106	0.000271	0.001648	0.000220	0.000190	0.000115	0.000233	0.000193	0.000272	0.000303
40	0.000456	0.001070	0.001725	0.000794	0.000776	0.000513	0.001010	0.001001	0.001699	0.001258
41	0.002672	0.003526	0.003692	0.002623	0.002627	0.001732	0.003395	0.002717	0.003965	0.004097
42	0.004320	0.055044	0.002916	0.003278	0.003164	0.002016	0.004396	0.003523	0.004983	0.005524
43	0.029183	0.063039	0.046172	0.056255	0.041020	0.027571	0.053842	0.067552	0.077233	0.076633
44	0.024189	0.069226	0.048304	0.211068	0.041795	0.038791	0.061598	0.049346	0.086665	0.074586
45	0.005185	0.011859	0.008936	0.006799	0.006797	0.004542	0.008921	0.008440	0.013596	0.012638
46	0.006754	0.013613	0.011657	0.010478	0.009856	0.006761	0.013100	0.011897	0.019367	0.017494
47	0.020535	0.046946	0.039420	0.032508	0.034348	0.021010	0.045019	0.038898	0.073298	0.069521
48	0.145117	0.401331	0.231863	0.328966	0.304535	0.186324	0.364757	1.219241	0.374710	0.441748
49	0.191008	0.420801	0.327732	0.298254	0.292330	0.198216	0.391064	0.385300	1.513736	0.511740
50	0.026885	0.064163	0.046381	0.043369	0.044655	0.031532	0.056126	0.051862	0.078994	1.120590
51	0.030441	0.061568	0.050214	0.047135	0.046483	0.034095	0.058520	0.051965	0.071448	0.070331
52	0.014025	0.031985	0.024825	0.022772	0.022871	0.015523	0.031524	0.026878	0.053438	0.049217
53	0.033611	0.065187	0.042583	0.051575	0.045475	0.027021	0.050962	0.059802	0.065633	0.077698
54	0.079872	0.182300	0.158293	0.129412	0.130381	0.090348	0.172014	0.153058	0.230219	0.227734
55	0.545066	1.249321	0.875517	0.782893	0.782401	0.525078	1.050008	1.016201	1.580636	1.590329
56	0.165064	0.388638	0.390918	0.355139	0.381272	0.271581	0.501948	0.357297	0.430738	0.410659
57	0.236766	0.668602	0.333745	0.513335	0.495996	0.277018	0.574826	0.347504	0.590901	0.712983

TABLE C-32. - WASHINGTON 1980 TOTAL (DIRECT, INDIRECT, AND INDUCED) REQUIREMENTS (Cont.)

	51	52	53	54	55	56	57
1	0.009344	0.008461	0.009120	0.008939	0.011368	0.007094	0.008904
2	0.006666	0.006138	0.006641	0.006245	0.008824	0.002994	0.006157
3	0.004879	0.004506	0.004723	0.004092	0.058751	0.036340	0.046827
4	0.001574	0.001534	0.001310	0.001455	0.001465	0.000618	0.001878
5	0.000904	0.000838	0.000877	0.000860	0.001088	0.000685	0.000869
6	0.0042600	0.039479	0.041209	0.038355	0.050710	0.033963	0.041145
7	0.0040068	0.037093	0.038249	0.035988	0.046596	0.031330	0.039548
8	0.010344	0.009590	0.009781	0.010360	0.011779	0.008033	0.010349
9	0.013618	0.012632	0.013295	0.013128	0.016509	0.010678	0.012968
10	0.017533	0.016276	0.017389	0.015684	0.021806	0.014469	0.016228
11	0.034559	0.032076	0.033566	0.033849	0.041314	0.027869	0.033192
12	0.001291	0.001183	0.001013	0.001037	0.000993	0.000879	0.001639
13	0.009592	0.008078	0.008695	0.007569	0.009626	0.008266	0.008473
14	0.017659	0.018030	0.011419	0.013698	0.008604	0.007325	0.026265
15	0.004244	0.004364	0.002910	0.003354	0.002357	0.001986	0.006005
16	0.009364	0.009685	0.006423	0.007404	0.005121	0.004398	0.013201
17	0.025682	0.026522	0.016652	0.019938	0.012530	0.010763	0.038098
18	0.005032	0.005008	0.003371	0.004027	0.002672	0.002363	0.007290
19	0.013915	0.014103	0.009198	0.010771	0.007179	0.006153	0.020314
20	0.006835	0.006330	0.005064	0.005357	0.004650	0.004380	0.009127
21	0.001523	0.001493	0.001330	0.001335	0.001412	0.001124	0.001554
22	0.013064	0.015338	0.011740	0.011162	0.010144	0.009289	0.013053
23	0.010457	0.009654	0.009057	0.009230	0.010154	0.007798	0.010731
24	0.0048101	0.008641	0.0049200	0.0041760	0.035079	0.031377	0.032306
25	0.002057	0.002904	0.001802	0.002112	0.001763	0.001660	0.002127
26	0.007334	0.008751	0.005984	0.007160	0.005486	0.005373	0.008807
27	0.0051571	0.006577	0.0045370	0.0049852	0.0046358	0.039270	0.058581
28	0.002882	0.002802	0.002409	0.002453	0.002567	0.001964	0.003402
29	0.0041110	0.0042240	0.0026879	0.0031752	0.020644	0.017579	0.060686
30	0.011872	0.011939	0.007767	0.009166	0.005663	0.004916	0.017747
31	0.001395	0.001454	0.000943	0.001145	0.000747	0.000664	0.002010
32	0.002792	0.002666	0.001837	0.002127	0.001409	0.001208	0.004112
33	0.019139	0.019463	0.013384	0.015150	0.009255	0.008000	0.028582
34	0.009703	0.009652	0.007629	0.011219	0.007403	0.006015	0.012223
35	0.012857	0.011621	0.008197	0.009441	0.006077	0.005700	0.019366
36	0.004370	0.004257	0.002837	0.004094	0.002133	0.001867	0.006495
37	0.005563	0.005054	0.003458	0.004063	0.002464	0.002145	0.008521
38	0.003434	0.003356	0.002619	0.002800	0.002318	0.002537	0.004476
39	0.000359	0.000332	0.000244	0.000274	0.000198	0.000171	0.000496
40	0.001313	0.001244	0.001142	0.001129	0.001202	0.001253	0.001460
41	0.004313	0.004010	0.003703	0.003608	0.003810	0.004521	0.004900
42	0.005794	0.005398	0.004825	0.004872	0.004016	0.003142	0.007688
43	0.079491	0.077142	0.065663	0.067989	0.065516	0.056053	0.081662
44	0.070914	0.099675	0.066213	0.074789	0.069144	0.070112	0.074136
45	0.013819	0.023450	0.012043	0.011301	0.011453	0.011398	0.011692
46	0.018693	0.033795	0.017766	0.022283	0.017763	0.018271	0.015540
47	0.060952	0.058946	0.065848	0.065016	0.054711	0.038091	0.054030
48	0.543100	0.564487	0.344533	0.416410	0.250830	0.213097	0.818990
49	0.507194	0.487478	0.485536	0.479775	0.553068	0.486773	0.493988
50	0.075595	0.075220	0.070738	0.067826	0.072670	0.068441	0.070214
51	1.113839	0.079003	0.068754	0.065686	0.068275	0.064122	0.067671
52	0.052039	1.089493	0.048497	0.061565	0.040779	0.039013	0.037796
53	0.073565	0.101415	1.104754	0.071271	0.047744	0.039765	0.066774
54	0.215935	0.212596	0.218101	1.222606	0.240126	0.225190	0.203721
55	1.523499	1.412366	1.538522	1.374242	2.025258	0.882947	1.386484
56	0.421059	0.407866	0.372109	0.359956	0.251936	1.216162	0.451545
57	0.907359	0.816432	0.551394	0.652698	0.378250	0.330779	1.411816

FOOTNOTES FOR TABLES C-33 AND C-34

Table C-33

(*) Less than \$500,000.

Note--Detail may not add to total due to rounding.

1. For this table, industry 80 is split into two rows. Row 80A shows the direct allocation to consuming industry of imported goods and services which are not substitutable for domestically produced goods and services. It also shows the distribution to final demand categories of imported goods and services which are consumed by final demand in substantially the same form in which they were imported. Row 80B classifies transferred imports according to the industry producing the domestic goods and services for which these imports are substitutes. The negative entries shown where rows 80A and 80B intersect the "Exports" column equal the sum of the positive entries along these rows.
2. Entries represent the sum of the value of transferred imports at domestic port value and the secondary output of other industries which has been transferred to the primary producing industry.
3. The detailed entries reflect gross exports of goods and services from each producing industry. Imports in total are shown as negative entries in this column on rows 80A and 80B. Therefore, the sum of the column equals the GNP component "net exports of goods and services."

Table C-34

(*) Less than .000005.

Note--Detail may not add to total due to rounding.

1. To prevent requirements for scrap and by-products from generating production, scrap and by-products have been treated as inputs to the producing industry rather than to the consuming industry. As a result of this treatment, the sum of the coefficients is increased in the industries producing the scrap or by-products and reduced in the consuming industries. The entries in this row are the offsetting adjustments necessary to restore the industry sum to unity.

Source: U. S. Department of Commerce, Office of Business Economics.

TABLE C-33. — UNITED STATES 1961 GROSS FLOWS
[In millions of 1961 dollars at producers' prices]

For the distribution of output of an industry, read the row for that industry. For the composition of inputs to an industry, read the column for that industry.	Livestock and live- stock products	Other agricultural products	Forestry and fishery products	Agricultural, forestry and fishery services	Iron and ferroalloy ores mining	Nonferrous metal ores mining	Coal mining	Crude petroleum and natural gas	Stone and clay mining and quarrying	Chemical and fertilizer mineral mining
	1	2	3	4	5	6	7	8	9	10
1. Livestock & Livestock Products.....	3,975	1,755	115	208	---	---	---	---	---	---
2. Other Agricultural Products.....	6,938	748	138	986	---	---	---	---	---	---
3. Forestry & Fishery Products.....	---	---	23	---	---	---	---	---	---	---
4. Agricultural, Forestry & Fishery Services.....	516	441	21	2	---	---	---	---	---	---
5. Iron & Ferroalloy Ores Mining.....	---	---	---	---	76	14	---	---	---	---
6. Nonferrous Metal Ores Mining.....	---	---	---	---	45	258	---	---	1	---
7. Coal Mining.....	6	1	---	---	4	1	437	---	2	---
8. Crude Petroleum & Natural Gas.....	---	---	---	---	---	---	---	310	---	---
9. Stone and Clay Mining and Quarrying.....	1	74	---	---	---	---	1	---	15	12
10. Chemical & Fertilizer Mineral Mining.....	---	30	---	---	---	1	---	---	1	41
11. New Construction.....	---	---	---	---	---	---	---	---	---	---
12. Maintenance & Repair Construction.....	238	975	---	2	1	1	2	5	2	---
13. Ordnance & Accessories.....	---	---	---	---	---	---	---	---	---	---
14. Food & Kindred Products.....	3,267	3	24	8	---	---	---	---	---	---
15. Tobacco Manufactures.....	---	---	---	---	---	---	---	---	---	---
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	---	7	---	---	---	2	2	---	---	---
17. Miscellaneous Textile Goods & Floor Coverings.....	7	32	14	17	---	---	---	3	---	---
18. Apparel.....	---	---	---	---	---	---	---	---	---	---
19. Miscellaneous Fabricated Textile Products.....	10	47	---	---	---	---	---	---	---	---
20. Lumber & Wood Products, Except Containers.....	2	2	---	---	7	2	17	6	---	---
21. Wooden Containers.....	---	94	---	---	---	---	---	---	---	---
22. Household Furniture.....	---	---	---	---	---	---	---	---	---	---
23. Other Furniture & Fixtures.....	---	---	---	---	---	---	---	---	---	---
24. Paper & Allied Products, Except Containers.....	---	---	9	2	---	1	6	5	15	3
25. Paperboard Containers & Boxes.....	15	3	10	6	---	---	1	---	3	1
26. Printing & Publishing.....	5	8	---	---	---	1	1	1	1	---
27. Chemicals & Selected Chemical Products.....	18	1,270	---	---	18	58	45	55	22	21
28. Plastics & Synthetic Materials.....	---	---	---	---	---	---	---	---	---	---
29. Drugs, Cleaning & Toilet Preparations.....	30	---	---	---	---	---	---	1	---	---
30. Paints & Allied Products.....	---	---	2	---	---	---	1	6	---	---
31. Petroleum Refining & Related Industries.....	50	913	20	3	13	10	28	58	52	6
32. Rubber & Miscellaneous Plastics Products.....	23	163	10	2	1	5	22	40	37	3
33. Leather Tanning & Industrial Leather Products.....	---	---	---	---	---	---	---	---	---	---
34. Footwear & Other Leather Products.....	1	4	---	---	---	---	---	---	---	---
35. Glass & Glass Products.....	4	---	---	---	---	---	---	---	---	---
36. Stone & Clay Products.....	1	27	---	---	1	8	6	5	118	---
37. Primary Iron & Steel Manufacturing.....	---	---	---	---	26	64	21	3	26	12
38. Primary Nonferrous Metal Manufacturing.....	1	1	---	---	2	8	16	8	2	---
39. Metal Containers.....	5	15	---	---	---	---	---	---	---	---
40. Heating, Plumbing & Structural Metal Products.....	---	---	---	---	1	1	1	7	---	---
41. Stampings, Screw Machine Products & Bolts.....	21	---	---	---	---	1	14	6	---	---
42. Other Fabricated Metal Products.....	31	40	1	9	---	2	13	56	1	1
43. Engines & Turbines.....	---	---	---	---	---	1	---	14	---	---
44. Farm Machinery & Equipment.....	5	212	---	---	---	---	---	---	---	---
45. Construction, Mining & Oil Field Machinery.....	---	---	---	---	27	34	87	34	81	16
46. Materials Handling Machinery & Equipment.....	---	---	---	---	---	---	11	---	28	4
47. Metalworking Machinery & Equipment.....	---	---	---	---	---	1	---	---	---	---
48. Special Industry Machinery & Equipment.....	---	---	---	---	---	---	---	10	---	---
49. General Industrial Machinery & Equipment.....	---	---	---	---	---	3	5	98	6	1
50. Machine Shop Products.....	2	3	---	---	---	---	1	1	1	---
51. Office, Computing & Accounting Machines.....	---	---	---	---	---	---	---	---	---	---
52. Service Industry Machines.....	---	---	---	---	---	---	---	---	---	---
53. Electric Industrial Equipment & Apparatus.....	---	---	---	---	---	---	---	40	4	---
54. Household Appliances.....	---	---	---	---	---	---	---	---	---	---
55. Electric Lighting & Wiring Equipment.....	1	1	---	---	---	1	4	1	---	---
56. Radio, Television & Communication Equipment.....	---	---	---	---	2	---	---	---	---	---
57. Electronic Components & Accessories.....	---	---	---	---	---	---	---	12	---	---
58. Misc. Electrical Machinery, Equipment & Supplies.....	9	24	---	---	---	---	---	1	---	---
59. Motor Vehicles & Equipment.....	26	36	---	---	1	1	5	10	7	2
60. Aircraft & Parts.....	---	---	---	---	---	---	---	---	---	---
61. Other Transportation Equipment.....	---	4	25	---	3	---	12	---	---	---
62. Scientific & Controlling Instruments.....	---	---	---	---	---	1	---	1	---	---
63. Optical, Ophthalmic & Photographic Equipment.....	---	---	---	---	---	---	---	---	---	---
64. Miscellaneous Manufacturing.....	1	3	1	---	---	---	4	---	1	---
65. Transportation & Warehousing.....	564	302	26	12	114	45	20	284	29	45
66. Communications, Except Radio & TV Broadcasting.....	58	77	4	7	2	3	2	3	3	1
67. Radio & TV Broadcasting.....	102	184	1	---	---	---	---	---	---	---
68. Electric, Gas, Water & Sanitary Services.....	---	---	1	1	22	41	61	95	47	31
69. Wholesale & Retail Trade.....	994	1,072	25	5	27	30	90	154	72	18
70. Finance & Insurance.....	418	422	34	6	---	23	28	131	22	5
71. Real Estate & Rental.....	332	1,488	45	18	103	51	61	1,664	50	---
72. Hotels; Personal & Repair Services exc. Auto.....	---	---	---	---	1	1	---	---	2	1
73. Business Services.....	55	915	121	6	---	11	14	424	14	5
74. Research & Development.....	---	---	---	---	---	---	---	---	---	---
75. Automobile Repair & Services.....	64	57	---	---	---	---	1	17	---	---
76. Amusements.....	---	---	---	---	---	---	---	---	---	---
77. Medical, Educational Services & Nonprofit Organizations.....	173	14	---	1	1	2	3	12	2	1
78. Federal Government Enterprises.....	---	---	1	1	---	---	---	---	---	---
79. State & Local Government Enterprises.....	1	1	---	---	---	---	---	---	---	---
80A. Directly Allocated Imports ¹	7	213	---	---	---	---	---	---	2	---
80B. Transferred Imports ¹	173	213	318	---	354	202	1	941	104	73
81. Business Travel, Entertainment & Gifts.....	14	28	1	1	---	7	10	77	---	---
82. Office Supplies.....	1	2	1	---	---	---	1	3	---	---
83. Scrap, Used & Secondhand Goods.....	---	---	---	---	---	---	3	74	3	1
84. Government Industry.....	---	---	---	---	---	---	---	---	---	---
85. Rest of the World Industry.....	---	---	---	---	---	---	---	---	---	---
86. Household Industry.....	---	---	---	---	---	---	---	---	---	---
87. Inventory Valuation Adjustment.....	---	---	---	---	---	---	---	---	---	---
I. Intermediate Inputs, Total.....	18,001	12,233	999	404	890	911	1,078	4,697	794	331
V.A. Value Added.....	8,052	12,186	628	732	505	616	1,415	7,185	1,081	364
T. Total.....	26,053	24,419	1,627	1,136	1,396	1,527	2,493	11,882	1,875	695
TR. Transfers ²	194	257	583	583	475	250	2	1,175	238	114

TABLE C33.—UNITED STATES 1961 GROSS FLOWS (Cont.)
 [in millions of 1961 dollars at producers' prices]

	New construction	Maintenance and repair construction	Ordinance and accessories	Food and kindred products	Tobacco manufactures	Broad and narrow fabrics, yarn and thread mills	Miscellaneous textile goods and floor coverings	Apparel	Miscellaneous fabricated textile products	Lumber and wood products, except containers
	11	12	13	14	15	16	17	18	19	20
1. Livestock & Livestock Products.....	257	---	---	16,187	---	130	74	---	---	172
2. Other Agricultural Products.....	---	---	---	5,396	1,289	1,323	18	9	---	823
3. Forestry & Fishery Products.....	---	---	---	303	---	---	---	196	1	10
4. Agricultural, Forestry & Fishery Services.....	---	---	---	---	---	---	---	---	---	---
5. Iron & Ferrous Ores Mining.....	---	---	---	---	---	---	---	---	---	---
6. Nonferrous Metal Ores Mining.....	---	---	---	---	---	---	---	---	---	---
7. Coal Mining.....	*	---	1	39	1	14	1	2	*	2
8. Crude Petroleum & Natural Gas.....	*	---	---	---	---	---	---	---	---	---
9. Stone and Clay Mining and Quarrying.....	720	148	---	4	---	---	*	---	---	*
10. Chemical & Fertilizer Mineral Mining.....	---	---	---	9	---	1	*	*	---	*
11. New Construction.....	---	---	---	---	---	---	---	---	---	---
12. Maintenance & Repair Construction.....	7	1	6	248	*	8	*	8	*	16
13. Ordnance & Accessories.....	6	---	79	---	---	---	---	---	*	---
14. Food & Kindred Products.....	18	---	---	11,913	42	28	18	---	*	*
15. Tobacco Manufactures.....	---	---	---	1	1,286	---	---	---	---	---
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	---	---	---	7	1	4,073	463	4,200	1,139	*
17. Miscellaneous Textile Goods & Floor Coverings.....	5	1	1	1	---	304	315	101	207	2
18. Apparel.....	---	---	2	41	---	17	8	2,572	23	11
19. Miscellaneous Fabricated Textile Products.....	*	1	---	137	---	41	14	193	166	2
20. Lumber & Wood Products, Except Containers.....	3,443	447	---	4	1	2	*	---	*	2,483
21. Wooden Containers.....	---	---	4	99	10	---	---	*	---	30
22. Household Furniture.....	316	---	*	---	---	*	9	*	8	21
23. Other Furniture & Fixtures.....	194	15	---	---	---	---	---	---	8	3
24. Paper & Allied Products, Except Containers.....	342	72	6	414	79	18	25	15	34	61
25. Paperboard Containers & Boxes.....	---	---	14	968	78	95	18	97	25	38
26. Printing & Publishing.....	8	1	9	139	15	9	1	15	3	35
27. Chemicals & Selected Chemical Products.....	405	77	10	270	6	190	9	47	*	64
28. Plastics & Synthetic Materials.....	---	---	---	15	123	1,021	419	155	---	62
29. Drugs, Cleaning & Toilet Preparations.....	---	---	3	226	8	26	1	1	2	10
30. Paints & Allied Products.....	208	951	2	7	*	4	1	*	*	42
31. Petroleum Refining & Related Industries.....	1,097	404	9	313	3	30	5	6	2	80
32. Rubber & Miscellaneous Plastics Products.....	356	74	111	162	11	50	37	26	77	58
33. Leather Tanning & Industrial Leather Products.....	---	---	---	*	*	2	*	44	*	---
34. Footwear & Other Leather Products.....	*	*	*	*	*	*	1	12	7	1
35. Glass & Glass Products.....	94	87	4	671	---	28	2	*	*	11
36. Stone & Clay Products.....	4,542	610	11	3	*	2	2	*	---	35
37. Primary Iron & Steel Manufacturing.....	2,301	295	52	2	---	4	1	1	1	*
38. Primary Nonferrous Metal Manufacturing.....	941	310	211	42	8	3	1	---	*	11
39. Metal Containers.....	---	---	---	1,697	9	---	*	---	---	---
40. Heating, Plumbing & Structural Metal Products.....	5,361	892	11	---	---	1	---	---	*	3
41. Stampings, Screw Machine Products & Bolts.....	92	21	27	179	*	1	*	---	1	22
42. Other Fabricated Metal Products.....	892	55	43	95	10	10	4	20	6	72
43. Engines & Turbines.....	2	*	4	---	---	---	---	---	---	*
44. Farm Machinery & Equipment.....	3	---	3	---	---	---	1	---	---	*
45. Construction, Mining & Oil Field Machinery.....	159	21	1	---	---	---	---	---	---	---
46. Materials Handling Machinery & Equipment.....	322	10	*	---	---	---	*	---	---	4
47. Metalworking Machinery & Equipment.....	1	*	46	15	*	2	1	*	*	1
48. Special Industry Machinery & Equipment.....	---	---	7	*	---	72	2	*	---	14
49. General Industrial Machinery & Equipment.....	324	21	26	2	*	1	*	*	1	12
50. Machine Shop Products.....	3	*	384	1	*	*	*	*	*	3
51. Office, Computing & Accounting Machines.....	---	---	7	---	---	---	---	---	*	---
52. Service Industry Machines.....	219	22	17	*	---	---	---	---	*	*
53. Electric Industrial Equipment & Apparatus.....	493	92	90	10	*	1	*	*	---	*
54. Household Appliances.....	174	51	1	---	---	---	---	---	---	*
55. Electric Lighting & Wiring Equipment.....	933	143	50	25	1	3	1	---	*	11
56. Radio, Television & Communication Equipment.....	39	26	166	---	---	---	---	---	---	---
57. Electronic Components & Accessories.....	2	*	3	---	---	---	---	---	*	---
58. Misc. Electrical Machinery, Equipment & Supplies.....	17	6	1	4	*	---	*	*	*	1
59. Motor Vehicles & Equipment.....	1	*	20	---	---	---	1	---	---	1
60. Aircraft & Parts.....	---	---	1,060	---	---	---	1	---	1	*
61. Other Transportation Equipment.....	3	---	16	---	---	---	---	*	---	8
62. Scientific & Controlling Instruments.....	236	20	112	*	---	*	*	4	10	*
63. Optical, Ophthalmic & Photographic Equipment.....	*	*	2	---	---	*	---	---	---	---
64. Miscellaneous Manufacturing.....	108	58	11	36	8	21	30	307	47	16
65. Transportation & Warehousing.....	1,944	326	46	2,963	89	310	97	137	25	473
66. Communications, Except Radio & TV Broadcasting.....	120	20	19	181	3	20	7	49	6	24
67. Radio & TV Broadcasting.....	---	---	---	---	---	---	---	---	---	---
68. Electric, Gas, Water & Sanitary Services.....	188	27	20	421	7	138	21	51	9	62
69. Wholesale & Retail Trade.....	5,577	1,485	126	2,645	102	422	146	573	120	399
70. Finance & Insurance.....	481	57	29	413	15	81	26	115	13	61
71. Real Estate & Rental.....	243	40	20	345	9	59	22	192	29	62
72. Hotels, Personal & Repair Services exc. Auto.....	---	---	3	41	3	19	3	40	4	16
73. Business Services.....	2,939	72	50	1,976	333	124	24	166	18	56
74. Research & Development.....	---	---	6	---	---	2	---	---	---	---
75. Automobile Repair & Services.....	306	26	---	338	2	8	2	4	3	75
76. Amusements.....	---	---	*	1	*	*	*	1	*	*
77. Medical, Educational Services & Nonprofit Organizations.....	74	12	5	82	8	15	3	21	3	11
78. Federal Government Enterprises.....	---	---	4	38	16	11	4	32	4	4
79. State & Local Government Enterprises.....	18	3	1	42	*	4	1	2	1	7
80. Directly Allocated Imports.....	---	---	---	1,322	---	101	42	23	---	1
81. Transferred Imports.....	---	---	15	1,102	89	226	362	47	*	530
82. Business Travel, Entertainment & Gifts.....	245	41	84	390	12	49	13	108	18	86
83. Office Supplies.....	16	3	5	33	1	6	1	12	2	4
84. Scrap, Used & Secondhand Goods.....	50	*	---	---	---	---	23	---	1	2
85. Government Industry.....	---	---	---	---	---	---	---	---	---	---
86. Rest of the World Industry.....	---	---	---	---	---	---	---	---	---	---
87. Household Industry.....	---	---	---	---	---	---	---	---	---	---
88. Inventory Valuation Adjustment.....	---	---	---	---	---	---	---	---	---	---
89. Intermediate Inputs, Total.....	16,858	7,052	3,052	52,027	3,678	9,132	2,282	9,607	2,035	6,103
90. Value Added.....	20,926	11,757	1,556	18,655	3,220	3,066	699	6,224	642	2,765
91. Total.....	57,784	18,809	4,608	70,682	6,898	12,199	2,981	15,830	2,677	8,868
92. Transfers.....	---	---	728	7,710	111	485	589	127	522	881

TABLE C-33.- UNITED STATES 1961 GROSS FLOWS (Cont.)

[In millions of 1961 dollars at producers' prices]

	Wooden containers	Household furniture	Other furniture and fixtures	Paper and allied products, except containers	Paperboard containers and boxes	Printing and publishing	Chemicals and selected chemical products	Plastics and synthetic materials	Drugs, cleaning, and toilet preparations	Paints and allied products
	21	22	23	24	25	26	27	28	29	30
For the distribution of output of an industry, read the row for that industry.										
For the composition of inputs to an industry, read the column for that industry.										
1. Livestock & Livestock Products.....							17		6	
2. Other Agricultural Products.....							26		3	
3. Forestry & Fishery Products.....										
4. Agricultural, Forestry & Fishery Services.....							64			
5. Iron & Ferroalloy Ores Mining.....							65			
6. Nonferrous Metal Ores Mining.....		2	1	71	1	1	45	22	3	
7. Coal Mining.....							31			
8. Crude Petroleum & Natural Gas.....				42			25	1	5	1
9. Stone and Clay Mining and Quarrying.....				18			406	1		
10. Chemical & Fertilizer Mineral Mining.....										
11. New Construction.....					15	49	7	33	2	1
12. Maintenance & Repair Construction.....		2		46	1	4				
13. Ordnance & Accessories.....				93			143	20	208	66
14. Food & Kindred Products.....		27								
15. Tobacco Manufactures.....										
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....		189	3	65		1	1	5	1	
17. Miscellaneous Textile Goods & Floor Coverings.....		43	29	22		19	3	2		
18. Apparel.....		1	2	8	4		6	2	3	1
19. Miscellaneous Fabricated Textile Products.....		4	1	36			47		4	
20. Lumber & Wood Products, Except Containers.....	173	418	98	112	3	1	39	1	9	
21. Wooden Containers.....	16				2		3	1		
22. Household Furniture.....	2	54	51							
23. Other Furniture & Fixtures.....		24	27	2		6				
24. Paper & Allied Products, Except Containers.....	1	12	5	2,140	1,731	2,517	132	233	69	15
25. Paperboard Containers & Boxes.....	1	62	31	336	133	69	85	31	241	23
26. Printing & Publishing.....	1	1	2	139	28	1,874	38	6	34	5
27. Chemicals & Selected Chemical Products.....				400	10	221	2,943	1,882	1,045	494
28. Plastics & Synthetic Materials.....		1	2	100	13		261	142	18	264
29. Drugs, Cleaning & Toilet Preparations.....				24	7	7	146	57	476	24
30. Paints & Allied Products.....		72	29	3			48	24	17	3
31. Petroleum Refining & Related Industries.....	3	7	3	137	24	13	936	63	70	18
32. Rubber & Miscellaneous Plastics Products.....	1	143	15	181	35	17	103	105	81	6
33. Leather Tanning & Industrial Leather Products.....		3	3							
34. Footwear & Other Leather Products.....		1		1		1				
35. Glass & Glass Products.....		48	62	1	10		22	2	172	
36. Stone & Clay Products.....	1	9	3	55			47	2	15	21
37. Primary Iron & Steel Manufacturing.....	20	83	157	1			231		1	13
38. Primary Nonferrous Metal Manufacturing.....		31	24	17		19	212	2	1	1
39. Metal Containers.....				1	16		101	7	130	99
40. Heating, Plumbing & Structural Metal Products.....		9	22	1			3	2	1	1
41. Stampings, Screw Machine Products & Bolts.....	1	16	12	18	4	3	14	4	24	1
42. Other Fabricated Metal Products.....	3	208	61	127	11	26	52	8	73	3
43. Engines & Turbines.....										
44. Farm Machinery & Equipment.....			1							
45. Construction, Mining & Oil Field Machinery.....			1							
46. Materials Handling Machinery & Equipment.....		2					8			
47. Metalworking Machinery & Equipment.....		3	4	9	2	2	12	7	1	
48. Special Industry Machinery & Equipment.....	1	14	1	34	16	40	141	7	18	
49. General Industrial Machinery & Equipment.....		1	3	7	2	1	5	3	1	
50. Machine Shop Products.....				5	1	1	6	2		
51. Office, Computing & Accounting Machines.....			6	3		9	14			
52. Service Industry Machines.....			10	1			1		2	
53. Electric Industrial Equipment & Apparatus.....		1				6	19	4		
54. Household Appliances.....		3	7						2	
55. Electric Lighting & Wiring Equipment.....	1	5	2	16	2	1	2	2		
56. Radio, Television & Communication Equipment.....		1	3			7		2		
57. Electronic Components & Accessories.....		2			2					
58. Misc. Electrical Machinery, Equipment & Supplies.....										
59. Motor Vehicles & Equipment.....			3			2				
60. Aircraft & Parts.....			2			18	1			
61. Other Transportation Equipment.....			12				5	1	45	
62. Scientific & Controlling Instruments.....				5		59	8	15		
63. Optical, Ophthalmic & Photographic Equipment.....		15	30	13	4	42	24	3	9	1
64. Miscellaneous Manufacturing.....	18	77	24	459	147	221	502	175	158	61
65. Transportation & Warehousing.....										
66. Communications: Except Radio & TV Broadcasting.....	1	18	7	36	10	190	67	15	17	9
67. Radio & TV Broadcasting.....										
68. Electric, Gas, Water & Sanitary Services.....	4	21	9	231	24	65	407	58	35	10
69. Wholesale & Retail Trade.....	24	189	90	464	161	352	480	113	219	88
70. Finance & Insurance.....	3	20	9	78	30	153	150	43	62	17
71. Real Estate & Rental.....	5	44	19	93	45	567	158	35	73	27
72. Hotels; Personal & Repair Services Inc. Auto.....	1	7	3	11	6	20	9	4	4	1
73. Business Services.....	3	64	14	174	23	719	213	78	1,345	35
74. Research & Development.....				3			34	17		
75. Automobile Repair & Services.....	4	6	3	10	4	16	21	2	5	4
76. Amusements.....						1				
77. Medical, Educational Services & Nonprofit Organizations.....	1	4	2	13	5	18	15	6	9	2
78. Federal Government Enterprises.....		2	2	14	4	115	33	29	19	5
79. State & Local Government Enterprises.....				18	1		10	2	2	1
80A. Directly Allocated Imports.....		1				1	46		17	7
80B. Transferred Imports.....	5			1,060	2	52	322	31	51	1
81. Business Travel, Entertainment & Gifts.....	4	30	17	68	29	333	262	11	58	27
82. Office Supplies.....		3	2	6	3	48	14	1	4	2
83. Scrap, Used & Secondhand Goods.....				113			3	1		
84. Government Industry.....										
85. Rest of the World Industry.....										
86. Household Industry.....										
87. Inventory Valuation Adjustment.....										
I. Intermediate Inputs, Total.....	302	2,008	938	7,818	2,578	7,916	9,278	3,329	4,877	1,366
V.A. Value Added.....	166	1,483	755	4,179	1,587	7,194	5,376	1,812	2,968	734
T. Total.....	469	3,491	1,693	11,997	4,165	15,110	14,654	5,141	7,845	2,100
TR. Transfers.....	35	121	167	1,620	82	230	2,256	645	546	64

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)
[In millions of 1961 dollars at producers' prices]

	For the distribution of output of an industry, read the row for that industry.	For the composition of inputs to an industry, read the column for that industry.	Petroleum refining and related industries	Rubber and miscellane- ous plastics products	Leather tanning and in- dustrial leather products	Footwear and other leather products	Glass and glass products	Stone and clay products	Primary iron and steel manufacturing	Primary nonferrous metals manufacturing	Metal containers	Heating, plumbing and structural metal products
			31	32	33	34	35	36	37	38	39	40
Livestock & Livestock Products.....	-----	-----	-----	-----	65	-----	-----	-----	-----	-----	-----	-----
Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	-----	4	-----	-----	-----	-----
Fishery & Fishery Products.....	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----
Forestry & Forestry Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nonferrous Metal Mining.....	3	-----	-----	-----	-----	-----	-----	9	1,122	27	-----	-----
Coal Mining.....	5	9	-----	2	*	2	46	426	26	*	-----	1
Crude Petroleum & Natural Gas.....	9,494	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----
Stone and Clay Mining and Quarrying.....	71	8	-----	-----	-----	31	574	64	5	-----	-----	2
Chemical & Fertilizer Mineral Mining.....	1	9	-----	1	-----	1	26	8	2	-----	-----	-----
Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Maintenance & Repair Construction.....	28	8	-----	-----	-----	-----	1	-----	138	4	1	7
Transportation & Accessories.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Food & Kindred Products.....	11	2	266	-----	1	-----	7	8	1	-----	-----	-----
Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	7	-----	-----	-----	-----
Textile Milling.....	-----	184	-----	-----	75	-----	15	-----	-----	17	-----	2
Miscellaneous Textile Goods & Floor Coverings.....	-----	557	-----	-----	39	-----	2	-----	1	6	-----	-----
Apparel.....	3	23	-----	-----	18	3	-----	16	6	-----	-----	7
Miscellaneous Fabricated Textile Products.....	2	-----	-----	1	1	-----	4	2	2	-----	-----	2
Timber & Wood Products, Except Containers.....	2	15	-----	-----	29	40	15	23	13	1	-----	18
Metal Containers.....	-----	-----	-----	2	1	13	11	3	-----	-----	1	8
Household Furniture.....	-----	1	-----	-----	1	6	-----	2	-----	-----	-----	10
Other Furniture & Fixtures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	14
Paper & Allied Products, Except Containers.....	64	31	3	24	6	168	54	33	10	15	-----	15
Paperboard Containers & Boxes.....	37	63	1	39	199	80	17	8	31	33	-----	33
Printing & Publishing.....	1	29	2	19	4	17	33	11	7	5	-----	-----
Chemicals & Selected Chemical Products.....	600	411	62	1	104	182	219	122	*	21	-----	-----
Plastics & Synthetic Materials.....	16	1,197	2	-----	-----	88	5	125	2	3	-----	-----
Drugs, Cleaning & Toilet Preparations.....	54	4	22	1	4	51	41	12	6	2	-----	-----
Drugs & Allied Products.....	7	2	-----	-----	-----	8	18	9	41	24	-----	-----
Petroleum Refining & Related Industries.....	1,435	21	4	1	8	93	170	49	6	45	-----	-----
Rubber & Miscellaneous Plastics Products.....	8	289	10	207	10	84	73	21	36	12	-----	-----
Leather Tanning & Industrial Leather Products.....	-----	5	134	695	-----	1	-----	-----	1	1	-----	-----
Footwear & Other Leather Products.....	-----	10	2	293	-----	-----	-----	-----	-----	-----	-----	-----
Glass & Glass Products.....	3	60	-----	-----	128	9	1	-----	-----	33	-----	-----
Stone & Clay Products.....	40	32	9	7	74	1,039	344	58	5	52	-----	-----
Primary Iron & Steel Manufacturing.....	2	18	-----	-----	-----	45	4,561	170	1,061	2,030	-----	-----
Primary Nonferrous Metal Manufacturing.....	2	18	-----	1	6	17	379	3,903	26	625	-----	-----
Metal Containers.....	138	-----	-----	-----	-----	-----	-----	-----	4	4	-----	-----
Heating, Plumbing & Structural Metal Products.....	3	4	-----	-----	1	6	63	4	10	153	-----	-----
Pumps, Screw Machine Products & Bolts.....	2	29	1	2	11	12	136	107	29	167	-----	-----
Other Fabricated Metal Products.....	209	98	1	24	11	97	375	127	9	281	-----	-----
Engines & Turbines.....	-----	-----	-----	-----	-----	-----	3	-----	-----	22	-----	-----
Machine Machinery & Equipment.....	-----	-----	-----	-----	-----	-----	35	-----	-----	13	-----	-----
Construction, Mining & Oil Field Machinery.....	-----	-----	-----	-----	-----	1	19	-----	-----	31	-----	-----
Materials Handling Machinery & Equipment.....	-----	-----	-----	-----	-----	-----	3	1	-----	7	-----	-----
Working Machinery & Equipment.....	3	5	1	-----	4	11	144	84	28	44	-----	-----
Special Industry Machinery & Equipment.....	-----	7	-----	-----	-----	8	30	3	-----	37	-----	-----
General Industrial Machinery & Equipment.....	2	8	-----	-----	4	3	74	41	17	101	-----	-----
Machine Shop Products.....	-----	26	-----	-----	2	4	187	46	13	41	-----	-----
Office, Computing & Accounting Machines.....	-----	-----	-----	-----	-----	-----	1	-----	-----	5	-----	-----
Service Industry Machines.....	-----	-----	-----	-----	-----	-----	2	3	-----	59	-----	-----
Electric Industrial Equipment & Apparatus.....	4	5	1	-----	8	102	50	3	-----	93	-----	-----
Household Appliances.....	-----	4	-----	-----	1	-----	3	6	-----	63	-----	-----
Electric Lighting & Wiring Equipment.....	1	15	1	2	6	33	12	74	1	19	-----	-----
Radio, Television & Communication Equipment.....	6	8	-----	-----	-----	-----	-----	12	-----	1	-----	-----
Electronic Components & Accessories.....	-----	4	-----	2	-----	3	-----	4	-----	15	-----	-----
Scientific, Electrical Machinery, Equipment & Supplies.....	-----	1	-----	-----	-----	-----	-----	51	-----	-----	-----	-----
Motor Vehicles & Equipment.....	-----	-----	-----	-----	-----	2	45	21	-----	26	-----	-----
Aircraft & Parts.....	-----	23	-----	-----	-----	1	1	-----	7	10	-----	-----
Other Transportation Equipment.....	-----	3	-----	-----	-----	-----	20	9	-----	47	-----	-----
Scientific & Controlling Instruments.....	1	13	-----	6	3	4	6	5	-----	88	-----	-----
Optical, Ophthalmic & Photographic Equipment.....	-----	-----	-----	3	-----	1	2	-----	-----	-----	-----	-----
Miscellaneous Manufacturing.....	4	41	1	12	2	24	13	19	2	8	-----	-----
Transportation & Warehousing.....	1,055	196	22	38	71	516	1,202	258	61	156	-----	-----
Communications, Except Radio & TV Broadcasting.....	28	27	3	10	8	29	79	34	2	35	-----	-----
Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Electric, Gas, Water & Sanitary Services.....	327	96	7	11	107	261	564	274	17	57	-----	-----
Wholesale & Retail Trade.....	210	307	28	88	104	268	795	392	92	309	-----	-----
Finance & Insurance.....	142	55	6	25	28	91	180	89	16	74	-----	-----
Real Estate & Rental.....	169	98	3	31	21	72	90	49	10	56	-----	-----
Auto, Personal & Repair Services exc. Auto.....	-----	11	1	9	5	12	24	9	2	10	-----	-----
Business Services.....	447	732	4	99	45	132	211	102	25	107	-----	-----
Research & Development.....	9	-----	-----	-----	3	-----	21	6	-----	2	-----	-----
Automobile Repair & Services.....	23	3	1	1	2	30	8	7	1	19	-----	-----
Recreation.....	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
Medical, Educational Services & Nonprofit Organizations.....	21	10	1	4	3	10	26	12	3	10	-----	-----
Federal Government Enterprises.....	41	8	5	8	8	8	19	6	2	10	-----	-----
State & Local Government Enterprises.....	10	3	-----	-----	1	13	19	4	-----	2	-----	-----
Directly Allocated Imports.....	-----	216	4	-----	-----	30	-----	24	-----	-----	-----	-----
Unallocated Imports.....	622	53	42	20	59	109	449	955	-----	19	-----	-----
Business Travel, Entertainment & Gifts.....	36	77	3	22	25	80	97	56	9	74	-----	-----
Food Supplies.....	6	7	-----	3	2	6	10	5	1	5	-----	-----
Clothing, Used & Secondhand Goods.....	2	3	-----	-----	19	8	414	353	-----	25	-----	-----
Government Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Rest of the World Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Household Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inventory Valuation Adjustment.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Intermediate Inputs, Total.....	15,419	4,717	724	1,881	1,199	4,498	13,221	8,851	1,607	5,279	-----	-----
Value Added.....	4,942	3,471	295	1,518	1,429	4,084	8,848	3,457	755	3,041	-----	-----
Total.....	20,361	8,188	1,018	1,999	2,628	8,582	22,069	12,308	2,362	8,320	-----	-----
Imports ²	1,318	468	57	84	98	379	955	1,435	35	709	-----	-----

TABLE C-31.—UNITED STATES 1961 GROSS FLOWS (Cont.)
(In millions of 1961 dollars at producers' prices)

	Stampings, screw machine products and bolts	Other fabricated metal products	Engines and turbines	Farm machinery and equipment	Construction, mining and oil field machinery	Materials handling machinery and equipment	Metalworking machinery and equipment	Special industry machinery and equipment	General industrial machinery and equipment	Machine shop products
	41	42	43	44	45	46	47	48	49	50
For the distribution of output of an industry, read the row for that industry.										
For the composition of inputs to an industry, read the column for that industry.										
1. Livestock & Livestock Products.....	---	---	---	---	---	---	---	---	---	---
2. Other Agricultural Products.....	---	---	---	---	---	---	---	---	---	---
3. Forestry & Fishery Products.....	---	---	---	---	---	---	---	---	---	---
4. Agricultural, Forestry & Fishery Services.....	---	---	---	3	---	---	---	---	---	---
5. Iron & Ferrous Alloy Ores Mining.....	---	---	---	---	---	---	1	---	---	---
6. Nonferrous Metal Ores Mining.....	---	2	---	---	---	---	---	---	---	---
7. Coal Mining.....	1	2	2	2	2	0	1	1	1	0
8. Crude Petroleum & Natural Gas.....	---	---	---	---	---	---	---	---	---	---
9. Stone and Clay Mining and Quarrying.....	---	1	---	0	0	---	---	---	12	0
10. Chemical & Fertilizer Mineral Mining.....	---	0	---	---	---	---	---	---	---	---
11. New Construction.....	---	---	---	---	---	---	---	---	---	---
12. Maintenance & Repair Construction.....	2	6	1	2	1	---	0	3	5	0
13. Ordnance & Accessories.....	2	1	---	---	1	---	1	---	1	0
14. Food & Kindred Products.....	---	0	---	0	---	0	---	1	---	---
15. Tobacco Manufactures.....	---	---	---	---	---	---	---	---	---	---
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	0	6	0	0	0	2	---	4	2	0
17. Miscellaneous Textile Goods & Floor Coverings.....	0	9	---	---	---	---	---	---	---	---
18. Apparel.....	4	7	1	2	2	1	4	3	4	2
19. Miscellaneous Fabricated Textile Products.....	1	0	---	---	---	---	---	---	---	---
20. Lumber & Wood Products, Except Containers.....	20	60	1	0	4	1	6	10	6	---
21. Wooden Containers.....	2	5	---	1	---	0	0	0	0	---
22. Household Furniture.....	1	0	---	0	0	---	0	0	2	---
23. Other Furniture & Fixtures.....	1	7	---	1	---	1	0	0	1	0
24. Paper & Allied Products, Except Containers.....	10	23	2	1	3	1	0	0	12	0
25. Paperboard Containers & Boxes.....	37	39	9	5	3	0	1	1	7	---
26. Printing & Publishing.....	7	22	3	1	1	1	0	4	2	0
27. Chemicals & Selected Chemical Products.....	13	70	0	2	3	---	4	7	0	---
28. Plastics & Synthetic Materials.....	15	6	1	0	1	---	2	2	1	---
29. Drugs, Cleaning & Toilet Preparations.....	3	2	1	1	2	1	2	2	2	1
30. Paints & Allied Products.....	21	12	2	9	5	3	0	1	3	---
31. Petroleum Refining & Related Industries.....	26	30	0	9	13	4	21	18	16	20
32. Rubber & Miscellaneous Plastics Products.....	20	50	10	89	40	24	15	40	19	0
33. Leather Tanning & Industrial Leather Products.....	0	1	0	3	0	0	0	4	1	1
34. Footwear & Other Leather Products.....	1	1	---	0	0	0	0	0	0	0
35. Glass & Glass Products.....	6	2	1	0	1	0	1	0	0	0
36. Stone & Clay Products.....	32	52	12	13	18	5	31	14	30	30
37. Primary Iron & Steel Manufacturing.....	800	1,393	205	340	486	130	313	288	459	150
38. Primary Nonferrous Metal Manufacturing.....	272	511	69	19	23	15	122	150	125	159
39. Metal Containers.....	10	7	---	---	0	0	1	0	0	---
40. Heating, Plumbing & Structural Metal Products.....	31	50	3	5	44	14	15	34	80	4
41. Stampings, Screw Machine Products & Bolts.....	102	134	43	68	30	20	112	30	45	10
42. Other Fabricated Metal Products.....	100	279	5	15	30	27	92	53	00	30
43. Engines & Turbines.....	5	5	153	97	69	12	4	1	36	0
44. Farm Machinery & Equipment.....	4	7	34	90	46	5	6	4	0	1
45. Construction, Mining & Oil Field Machinery.....	1	19	74	37	160	65	7	24	33	6
46. Materials Handling Machinery & Equipment.....	1	7	3	1	10	40	10	15	32	1
47. Metalworking Machinery & Equipment.....	49	192	34	40	55	20	234	74	70	35
48. Special Industry Machinery & Equipment.....	2	17	3	0	7	6	39	160	32	10
49. General Industrial Machinery & Equipment.....	3	57	74	140	196	83	146	191	321	16
50. Machine Shop Products.....	10	23	69	39	16	22	25	15	28	150
51. Office, Computing & Accounting Machines.....	2	2	---	---	2	2	0	6	0	1
52. Service Industry Machines.....	0	0	0	1	2	2	7	15	37	1
53. Electric Industrial Equipment & Apparatus.....	17	30	39	14	36	59	115	127	223	10
54. Household Appliances.....	9	16	0	0	1	---	7	0	---	0
55. Electric Lighting & Wiring Equipment.....	16	16	1	2	4	4	2	0	5	2
56. Radio, Television & Communication Equipment.....	1	3	0	0	3	0	0	33	10	1
57. Electronic Components & Accessories.....	4	0	---	---	1	1	0	13	2	0
58. Misc. Electrical Machinery, Equipment & Supplies.....	1	3	30	19	5	3	0	1	5	3
59. Motor Vehicles & Equipment.....	90	32	56	40	45	9	104	7	26	6
60. Aircraft & Parts.....	6	5	24	4	2	2	21	11	70	5
61. Other Transportation Equipment.....	1	5	21	4	13	4	1	0	21	5
62. Scientific & Controlling Instruments.....	7	22	2	3	3	1	0	0	11	0
63. Optical, Ophthalmic & Photographic Equipment.....	2	2	0	0	0	0	1	7	1	0
64. Miscellaneous Manufacturing.....	70	21	3	3	2	39	12	3	1	1
65. Transportation & Warehousing.....	67	111	26	30	45	15	35	40	59	21
66. Communications; Except Radio & TV Broadcasting.....	11	21	5	0	10	4	35	32	40	14
67. Radio & TV Broadcasting.....	---	---	---	---	---	---	---	---	---	---
68. Electric, Gas, Water & Sanitary Services.....	39	57	9	13	20	5	26	10	27	17
69. Wholesale & Retail Trade.....	123	270	95	92	109	52	124	132	196	65
70. Finance & Insurance.....	35	55	13	10	24	10	35	26	29	10
71. Real Estate & Rental.....	0	43	10	13	10	12	70	34	32	11
72. Hotels, Personal & Repair Services exc. Auto.....	0	11	2	2	3	1	6	5	5	4
73. Business Services.....	0	119	25	60	47	20	48	43	50	20
74. Research & Development.....	---	---	12	---	---	---	---	---	---	---
75. Automobile Repair & Services.....	4	0	3	3	3	1	3	5	3	1
76. Amusements.....	0	0	0	0	0	0	0	0	0	0
77. Medical, Educational Services & Nonprofit Organizations.....	5	0	2	3	4	1	5	4	5	0
78. Federal Government Enterprises.....	0	0	2	0	3	2	4	3	5	1
79. State & Local Government Enterprises.....	1	2	0	1	1	0	1	1	1	0
80A. Directly Allocated Imports.....	---	---	1	---	---	---	34	12	---	---
80B. Transferred Imports.....	30	126	17	114	6	16	37	60	25	24
81. Business Travel, Entertainment & Gifts.....	42	81	20	20	33	14	50	45	50	22
82. Office Supplies.....	3	6	2	2	3	1	4	3	4	0
83. Scrap, Used & Secondhand Goods.....	---	11	3	---	2	0	2	3	7	1
84. Government Industry.....	---	---	---	---	---	---	---	---	---	---
85. Rest of the World Industry.....	---	---	---	---	---	---	---	---	---	---
86. Household Industry.....	---	---	---	---	---	---	---	---	---	---
87. Inventory Valuation Adjustment.....	---	---	---	---	---	---	---	---	---	---
I. Intermediate Inputs, Total.....	2,305	4,256	1,212	1,560	1,743	793	2,104	1,890	2,442	150
V. Value Added.....	1,073	3,743	777	927	1,492	452	2,340	1,474	1,076	1,011
T. Total.....	4,178	7,499	1,989	2,486	3,235	1,245	4,444	3,372	4,168	1,511
TR. Transfers.....	436	1,120	296	235	214	224	645	399	501	149

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)

[In millions of 1961 dollars at producers' prices]

	Office, computing and accounting machines	Service industry machines	Electric industrial equipment and apparatus	Household appliances	Electric lighting and wiring equipment	Radio, television and communication equipment	Electronic components and accessories	Miscellaneous electrical machinery, equipment and supplies	Motor vehicles and equipment	Aircraft and parts
	51	52	53	54	55	56	57	58	59	60
For the distribution of output of an industry, read the row for that industry.										
For the composition of inputs to an industry, read the column for that industry.										
1. Livestock & Livestock Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
5. Iron & Ferroalloy Ores Mining.....	-----	-----	5	-----	-----	-----	-----	2	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	4	-----	-----	2	-----	-----
7. Coal Mining.....	1	1	2	2	1	1	*	1	14	2
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----	-----	-----	-----	-----	-----	*	*	-----
0. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2. Maintenance & Repair Construction.....	2	3	-----	3	-----	12	-----	-----	-----	-----
3. Ordnance & Accessories.....	2	-----	8	3	*	12	3	*	86	24
4. Food & Kindred Products.....	-----	*	-----	*	*	172	22	-----	9	427
5. Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
6. Broad & Narrow Fabrics, Yarn & Thread Mills.....	*	*	2	11	-----	2	-----	1	61	2
7. Miscellaneous Textile Goods & Floor Coverings.....	*	-----	2	*	*	-----	-----	-----	108	7
8. Apparel.....	3	2	5	3	3	7	5	2	13	12
9. Miscellaneous Fabricated Textile Products.....	-----	*	-----	-----	-----	-----	-----	-----	177	-----
0. Lumber & Wood Products, Except Containers.....	2	9	8	7	3	17	1	*	16	24
1. Wooden Containers.....	1	13	*	22	-----	-----	-----	-----	-----	-----
2. Household Furniture.....	-----	3	-----	1	-----	122	22	-----	2	-----
3. Other Furniture & Fixtures.....	*	2	*	1	*	*	*	-----	5	20
4. Paper & Allied Products, Except Containers.....	21	11	49	6	7	41	32	2	105	5
5. Paperboard Containers & Boxes.....	5	22	24	40	47	48	21	13	31	10
6. Printing & Publishing.....	11	1	7	3	1	14	2	*	16	12
7. Chemicals & Selected Chemical Products.....	1	18	24	21	15	10	45	40	52	17
8. Plastics & Synthetic Materials.....	3	3	40	10	47	61	27	10	31	9
9. Drugs, Cleaning & Toilet Preparations.....	1	2	1	-----	*	3	*	*	24	6
0. Paints & Allied Products.....	3	14	19	25	13	4	2	*	114	12
Petroleum Refining & Related Industries.....	5	8	19	5	5	12	6	3	59	34
Rubber & Miscellaneous Plastics Products.....	35	33	48	150	46	97	27	91	873	96
Leather Tanning & Industrial Leather Products.....	*	*	1	1	*	2	*	*	8	-----
Footwear & Other Leather Products.....	*	*	*	6	-----	*	*	*	-----	*
Glass & Glass Products.....	1	9	6	7	83	45	125	1	303	2
Stone & Clay Products.....	8	15	49	31	18	30	25	18	89	53
Primary Iron & Steel Manufacturing.....	66	188	362	925	181	87	76	54	2,564	450
Primary Nonferrous Metal Manufacturing.....	63	147	450	188	145	188	176	192	339	418
Metal Containers.....	-----	*	-----	-----	-----	-----	-----	-----	-----	-----
Heating, Plumbing & Structural Metal Products.....	*	68	17	67	6	6	1	*	35	9
Stampings, Screw Machine Products & Bolts.....	32	88	86	211	69	161	82	42	843	262
Other Fabricated Metal Products.....	18	72	52	137	48	112	53	8	1,023	144
Engines & Turbines.....	-----	4	91	-----	-----	-----	-----	2	105	20
Farm Machinery & Equipment.....	*	1	1	*	1	-----	-----	1	36	2
Construction, Mining & Oil Field Machinery.....	*	1	6	1	1	1	2	3	15	2
Materials Handling Machinery & Equipment.....	*	3	2	-----	*	*	-----	-----	5	5
Metalworking Machinery & Equipment.....	29	8	73	33	15	43	22	26	321	278
Special Industry Machinery & Equipment.....	15	8	7	*	*	3	1	*	9	7
General Industrial Machinery & Equipment.....	22	45	59	48	4	11	4	34	171	161
Machine Shop Products.....	8	3	12	5	5	10	5	16	215	159
Office, Computing & Accounting Machines.....	291	*	6	*	-----	13	23	2	-----	10
Service Industry Machines.....	123	2	124	2	2	7	*	*	43	7
Electric Industrial Equipment & Apparatus.....	74	242	447	180	89	154	104	45	68	47
Household Appliances.....	187	3	41	3	1	3	2	5	*	34
Electric Lighting & Wiring Equipment.....	13	18	102	34	116	111	29	74	132	19
Radio, Television & Communication Equipment.....	30	9	62	1	7	570	131	10	145	429
Electronic Components & Accessories.....	137	*	176	*	14	1,730	237	32	24	89
Misc. Electrical Machinery, Equipment & Supplies.....	1	*	12	1	92	3	2	74	479	53
Motor Vehicles & Equipment.....	*	37	8	7	*	1	-----	55	8,694	87
Aircraft & Parts.....	16	19	*	1	*	76	-----	1	14	2,376
Other Transportation Equipment.....	-----	1	24	6	*	1	-----	*	31	3
Scientific & Controlling Instruments.....	9	38	80	128	8	52	18	8	142	258
Optical, Ophthalmic & Photographic Equipment.....	*	*	5	7	*	23	1	5	1	28
Miscellaneous Manufacturing.....	5	5	4	5	15	18	5	1	26	28
Transportation & Warehousing.....	32	42	77	68	37	118	42	25	574	128
Communications, Except Radio & TV Broadcasting.....	14	10	26	18	7	32	11	6	61	63
Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Electric, Gas, Water & Sanitary Services.....	11	14	44	27	15	27	30	12	145	79
Wholesale & Retail Trade.....	160	149	198	178	171	351	211	67	900	265
Finance & Insurance.....	19	24	31	15	13	37	20	8	124	46
Real Estate & Rental.....	26	38	52	24	27	61	82	14	85	84
Hotels; Personal & Repair Services exc. Auto.....	4	3	8	4	4	10	7	2	19	-----
Business Services.....	91	29	77	401	40	239	43	44	805	53
Research & Development.....	-----	-----	-----	-----	-----	3	3	-----	17	14
Automobile Repair & Services.....	1	3	3	1	1	2	*	1	11	2
Amusements.....	*	*	*	*	*	*	*	*	*	-----
Medical, Educational Services & Nonprofit Organizations.....	5	3	7	5	3	11	5	2	33	14
Federal Government Enterprises.....	5	3	17	10	4	25	14	5	55	15
State & Local Government Enterprises.....	*	1	1	1	1	1	1	1	7	3
Directly Allocated Imports.....	-----	-----	12	-----	-----	-----	12	-----	*	-----
Transferred Imports.....	96	11	57	1	19	166	16	28	371	118
Business Travel, Entertainment & Gifts.....	75	29	132	41	35	173	78	26	124	58
Office Supplies.....	5	2	8	3	2	11	5	2	12	12
Scrap, Used & Secondhand Goods.....	*	*	*	1	2	4	-----	*	7	5
Government Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Rest of the World Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Household Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Inventory Valuation Adjustment.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Intermediate Inputs, Total.....	1,479	1,847	3,229	2,701	1,492	5,358	1,919	1,117	21,030	7,117
Value Added.....	1,782	757	2,852	1,195	1,354	3,940	1,897	793	8,103	6,785
Total.....	3,261	2,605	6,081	3,895	2,846	9,297	3,816	1,910	29,134	13,902
Transfers ²	211	413	548	178	183	734	336	223	852	679

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)
(in millions of 1961 dollars at producers' prices)

	Other transportation equipment	Scientific and controlling instruments	Optical, ophthalmic, and photographic equipment	Miscellaneous manufacturing	Transportation and warehousing	Communications equipment, except radio and TV broadcasting	Radio and TV broadcasting	Electric, gas, water and sanitary services	Wholesale and retail trade	Finance and insurance
	61	62	63	64	65	66	67	68	69	70
1. Livestock & Livestock Products.....	-----	-----	-----	-----	2	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	5	-----	6	72	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	-----	3	2	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	151	-----
5. Iron & Ferroalloy Ores Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	2	-----	-----	-----	-----	-----	3	-----	-----
7. Coal Mining.....	2	*	3	1	27	-----	-----	627	-----	6
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	1,733	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----	-----	-----	2	-----	-----	-----	5	-----
10. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	334	-----	640	834	125
12. Maintenance & Repair Construction.....	1	1	1	17	1,310	-----	9	-----	8	-----
13. Ordnance & Accessories.....	-----	124	1	-----	-----	-----	-----	-----	582	-----
14. Food & Kindred Products.....	-----	14	-----	9	109	-----	-----	2	-----	-----
15. Tobacco Manufactures.....	-----	-----	-----	1	-----	-----	-----	-----	4	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	2	36	1	110	7	1	-----	2	10	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	3	8	1	39	19	5	2	-----	29	24
18. Apparel.....	4	11	2	9	5	-----	-----	-----	58	-----
19. Miscellaneous Fabricated Textile Products.....	2	1	-----	6	16	6	3	-----	45	35
20. Lumber & Wood Products, Except Containers.....	90	3	-----	114	10	-----	-----	2	60	-----
21. Wooden Containers.....	-----	1	-----	2	17	-----	-----	-----	94	-----
22. Household Furniture.....	27	3	-----	5	-----	-----	-----	-----	14	-----
23. Other Furniture & Fixtures.....	13	17	-----	-----	-----	-----	-----	-----	14	-----
24. Paper & Allied Products, Except Containers.....	6	23	60	132	36	-----	9	21	483	110
25. Paperboard Containers & Boxes.....	1	36	12	236	9	-----	2	1	391	26
26. Printing & Publishing.....	2	3	-----	33	84	134	11	6	273	440
27. Chemicals & Selected Chemical Products.....	9	14	113	50	39	-----	-----	17	120	-----
28. Plastics & Synthetic Materials.....	25	11	1	134	-----	-----	-----	1	4	-----
29. Drugs, Cleaning & Toilet Preparations.....	2	9	-----	14	13	1	-----	1	142	13
30. Paints & Allied Products.....	31	3	-----	48	45	-----	-----	-----	25	-----
31. Petroleum Refining & Related Industries.....	16	6	5	19	1,637	19	2	298	808	102
32. Rubber & Miscellaneous Plastics Products.....	34	57	14	214	284	8	1	10	271	58
33. Leather Tanning & Industrial Leather Products.....	-----	4	-----	41	-----	-----	-----	-----	2	-----
34. Footwear & Other Leather Products.....	-----	4	-----	36	-----	-----	-----	-----	20	1
35. Glass & Glass Products.....	19	16	22	34	6	-----	-----	-----	124	-----
36. Stone & Clay Products.....	30	17	30	14	5	-----	-----	30	137	-----
37. Primary Iron & Steel Manufacturing.....	445	90	11	171	42	-----	-----	68	9	-----
38. Primary Nonferrous Metal Manufacturing.....	72	197	53	306	56	29	-----	9	20	-----
39. Metal Containers.....	-----	11	-----	-----	-----	-----	-----	-----	8	-----
40. Heating, Plumbing & Structural Metal Products.....	168	6	-----	2	1	-----	-----	-----	101	-----
41. Stampings, Screw Machine Products & Bolts.....	17	77	10	76	16	-----	-----	-----	47	-----
42. Other Fabricated Metal Products.....	79	75	18	107	45	4	-----	189	70	-----
43. Engines & Turbines.....	95	-----	-----	-----	77	-----	3	-----	11	-----
44. Farm Machinery & Equipment.....	21	2	-----	2	-----	-----	-----	-----	17	-----
45. Construction, Mining & Oil Field Machinery.....	19	3	-----	-----	-----	-----	-----	-----	30	-----
46. Materials Handling Machinery & Equipment.....	17	-----	-----	-----	16	-----	-----	-----	14	-----
47. Metalworking Machinery & Equipment.....	19	57	8	5	25	-----	-----	3	17	-----
48. Special Industry Machinery & Equipment.....	1	-----	-----	-----	-----	-----	-----	-----	35	-----
49. General Industrial Machinery & Equipment.....	63	28	-----	6	17	-----	-----	-----	33	-----
50. Machine Shop Products.....	15	38	1	16	9	-----	-----	-----	28	-----
51. Office, Computing & Accounting Machines.....	-----	62	1	20	3	-----	-----	10	59	5
52. Service Industry Machines.....	9	8	-----	2	2	-----	-----	-----	40	-----
53. Electric Industrial Equipment & Apparatus.....	15	150	24	36	37	1	-----	14	27	-----
54. Household Appliances.....	17	4	-----	11	-----	-----	-----	-----	27	-----
55. Electric Lighting & Wiring Equipment.....	14	16	8	19	8	-----	-----	3	21	-----
56. Radio, Television & Communication Equipment.....	7	53	7	17	22	154	46	5	109	-----
57. Electronic Components & Accessories.....	-----	184	-----	12	28	8	-----	-----	14	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	5	4	-----	1	87	6	-----	1	61	2
59. Motor Vehicles & Equipment.....	52	67	-----	5	98	-----	-----	1	242	-----
60. Aircraft & Parts.....	18	74	-----	4	160	-----	-----	-----	68	-----
61. Other Transportation Equipment.....	286	7	10	375	6	-----	2	-----	12	12
62. Scientific & Controlling Instruments.....	6	296	22	10	33	-----	-----	-----	54	-----
63. Optical, Ophthalmic & Photographic Equipment.....	-----	28	100	-----	-----	-----	-----	-----	45	-----
64. Miscellaneous Manufacturing.....	10	27	3	364	58	11	10	9	131	26
65. Transportation & Warehousing.....	73	50	31	106	2,356	20	3	459	447	262
66. Communications: Except Radio & TV Broadcasting.....	11	21	-----	35	305	101	71	58	1,168	462
67. Radio & TV Broadcasting.....	-----	-----	6	-----	-----	-----	5	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	25	19	7	34	192	76	9	4,896	2,384	159
69. Wholesale & Retail Trade.....	185	209	81	424	1,109	60	21	294	1,817	280
70. Finance & Insurance.....	21	27	12	59	834	68	15	146	1,906	6,430
71. Real Estate & Rental.....	18	50	25	99	1,197	194	94	72	6,061	2,405
72. Hotels; Personal & Repair Services exc. Auto.....	2	6	2	11	-----	-----	-----	-----	249	-----
73. Business Services.....	36	76	117	160	605	215	78	303	5,933	1,244
74. Research & Development.....	-----	3	-----	-----	-----	-----	-----	-----	-----	-----
75. Automobile Repair & Services.....	4	1	1	10	971	19	2	32	1,003	98
76. Amusements.....	-----	-----	-----	-----	29	4	375	-----	115	6
77. Medical, Educational Services & Nonprofit Organizations.....	4	5	2	8	40	12	7	23	123	176
78. Federal Government Enterprises.....	3	6	4	13	67	51	1	433	1,083	399
79. State & Local Government Enterprises.....	1	1	-----	2	924	6	-----	3,332	433	88
80A. Directly Allocated Imports.....	-----	1	1	148	612	64	-----	-----	26	109
80B. Transferred Imports.....	56	92	94	281	891	-----	-----	55	-----	11
81. Business Travel, Entertainment & Gifts.....	39	104	19	81	162	55	35	74	1,825	408
82. Office Supplies.....	3	7	1	8	51	46	-----	21	259	160
83. Scrap, Used & Secondhand Goods.....	7	-----	-----	4	-----	-----	-----	-----	76	-----
84. Government Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
85. Rest of the World Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
86. Household Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
87. Inventory Valuation Adjustment.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
I. Intermediate Inputs, Total.....	2,283	2,647	949	4,020	15,318	1,715	811	13,910	30,969	13,685
V.4. Value Added.....	1,534	2,769	1,035	2,916	22,468	9,531	1,097	12,064	79,176	19,278
T. Total.....	3,822	4,916	1,983	6,936	37,786	11,247	1,908	25,974	110,145	32,963
TR. Transfers.....	201	685	195	633	1,815	-----	-----	3,954	3,398	89

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)

[In millions of 1961 dollars at producers' prices]

	Real estate and rental	Hotels, personal and repair services except auto	Business services	Research and development	Automobile repair and services	Amusements	Medical, educational services and non-profit organizations	Federal Government enterprises	State and local government enterprises	Goods imports of goods and services
	71	72	73	74	75	76	77	78	79	80A & 80B
For the distribution of output of an industry, read the row for that industry.										
For the composition of inputs to an industry, read the column for that industry.										
1. Livestock & Livestock Products.....	963	---	---	---	---	10	5	3	---	---
2. Other Agricultural Products.....	1,358	---	---	---	---	---	5	1,079	---	---
3. Forestry & Fishery Products.....	16	---	---	---	---	---	---	---	1	---
4. Agricultural, Forestry & Fishery Services.....	21	---	---	---	---	3	---	---	---	---
5. Iron & Ferroalloy Ores Mining.....	4	---	---	---	---	---	---	2	---	---
6. Nonferrous Metal Ores Mining.....	5	---	---	---	---	---	---	---	---	---
7. Coal Mining.....	11	---	33	---	12	---	---	46	86	---
8. Crude Petroleum & Natural Gas.....	193	---	---	1	---	---	---	---	28	---
9. Stone and Clay Mining and Quarrying.....	12	---	---	---	---	---	---	1	---	---
10. Chemical & Fertilizer Mineral Mining.....	4	---	---	---	---	---	---	---	---	---
11. New Construction.....	---	---	---	---	---	---	---	---	---	---
12. Maintenance & Repair Construction.....	6,421	38	25	---	114	132	738	20	1,457	---
13. Ordnance & Accessories.....	1	---	---	1,603	---	---	---	---	---	---
14. Food & Kindred Products.....	84	16	---	5	---	---	193	84	1	---
15. Tobacco Manufactures.....	4	---	---	---	---	---	---	---	---	---
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	23	136	---	1	---	---	3	---	---	---
17. Miscellaneous Textile Goods & Floor Coverings.....	8	26	19	3	17	4	33	---	3	---
18. Apparel.....	25	104	5	2	1	---	41	---	2	---
19. Miscellaneous Fabricated Textile Products.....	2	151	24	3	18	6	40	3	---	---
20. Lumber & Wood Products, Except Containers.....	21	6	---	---	---	---	4	---	---	---
21. Wooden Containers.....	2	---	---	---	---	---	---	---	---	---
22. Household Furniture.....	3	13	---	---	---	---	---	---	---	---
23. Other Furniture & Fixtures.....	1	3	---	---	---	---	---	---	---	---
24. Paper & Allied Products, Except Containers.....	13	158	77	8	4	4	95	37	2	---
25. Paperboard Containers & Boxes.....	11	21	9	2	1	1	23	9	---	---
26. Printing & Publishing.....	84	7	6,382	1	11	22	372	55	15	---
27. Chemicals & Selected Chemical Products.....	86	113	37	104	---	---	5	---	29	---
28. Plastics & Synthetic Materials.....	37	---	---	10	---	---	---	---	---	---
29. Drugs, Cleaning & Toilet Preparations.....	59	709	34	22	11	1	673	---	4	---
30. Paints & Allied Products.....	12	---	---	---	70	---	---	---	---	---
31. Petroleum Refining & Related Industries.....	440	162	125	22	30	4	79	9	49	---
32. Rubber & Miscellaneous Plastics Products.....	54	83	77	36	313	2	75	2	7	---
33. Leather Tanning & Industrial Leather Products.....	1	---	---	---	---	---	---	---	---	---
34. Footwear & Other Leather Products.....	3	8	1	---	---	11	3	1	---	---
35. Glass & Glass Products.....	4	4	---	1	106	---	8	---	---	---
36. Stone & Clay Products.....	25	61	---	---	48	---	---	18	1	---
37. Primary Iron & Steel Manufacturing.....	29	---	---	7	---	---	---	---	3	---
38. Primary Nonferrous Metal Manufacturing.....	14	8	19	17	---	---	---	---	---	---
39. Metal Containers.....	3	---	---	---	---	---	---	---	---	---
40. Heating, Plumbing & Structural Metal Products.....	14	---	---	16	---	---	---	---	---	---
41. Stampings, Screw Machine Products & Bolts.....	8	---	---	3	---	---	21	---	---	---
42. Other Fabricated Metal Products.....	11	31	1	20	125	---	---	4	26	---
43. Engines & Turbines.....	6	---	103	55	---	---	---	---	---	---
44. Farm Machinery & Equipment.....	6	---	166	11	---	---	---	---	---	---
45. Construction, Mining & Oil Field Machinery.....	13	---	19	4	---	---	---	---	---	---
46. Materials Handling Machinery & Equipment.....	4	---	---	4	---	---	---	---	---	---
47. Metalworking Machinery & Equipment.....	43	---	21	124	1	---	---	---	---	---
48. Special Industry Machinery & Equipment.....	14	1	---	5	---	---	---	---	---	---
49. General Industrial Machinery & Equipment.....	12	---	---	3	---	---	---	---	---	---
50. Machine Shop Products.....	11	---	1	3	133	---	---	1	1	---
51. Office, Computing & Accounting Machines.....	8	---	685	14	---	---	4	---	---	---
52. Service Industry Machines.....	16	44	113	12	---	---	---	---	---	---
53. Electric Industrial Equipment & Apparatus.....	12	8	---	215	7	---	---	---	---	---
54. Household Appliances.....	16	121	---	189	---	---	---	---	---	---
55. Electric Lighting & Wiring Equipment.....	3	10	---	92	37	---	---	---	---	---
56. Radio, Television & Communication Equipment.....	17	13	---	498	---	---	14	---	---	---
57. Electronic Components & Accessories.....	24	275	---	183	---	---	---	---	---	---
58. Misc. Electrical Machinery, Equipment & Supplies.....	34	4	6	29	138	---	14	1	1	---
59. Motor Vehicles & Equipment.....	19	---	6	238	1,262	---	2	14	15	---
60. Aircraft & Parts.....	---	---	---	1,947	---	---	---	---	---	---
61. Other Transportation Equipment.....	12	12	24	8	12	1	26	---	---	---
62. Scientific & Controlling Instruments.....	14	85	---	206	20	---	318	---	---	---
63. Optical, Ophthalmic & Photographic Equipment.....	8	121	228	46	---	28	83	---	---	---
64. Miscellaneous Manufacturing.....	23	319	280	12	2	102	37	---	---	---
65. Transportation & Warehousing.....	559	103	134	2	83	25	139	1,059	86	---
66. Communications, Except Radio & TV Broadcasting.....	259	75	763	2	62	35	221	17	31	---
67. Radio & TV Broadcasting.....	16	---	1,870	---	---	---	---	---	---	---
68. Electric, Gas, Water & Sanitary Services.....	330	299	339	---	184	53	496	92	523	---
69. Wholesale & Retail Trade.....	1,222	590	504	14	736	79	485	89	51	---
70. Finance & Insurance.....	2,549	242	372	6	247	194	325	8	59	---
71. Real Estate & Rental.....	1,555	681	1,117	14	365	334	1,882	62	92	---
72. Hotels, Personal & Repair Services exc. Auto.....	241	393	136	---	---	---	120	---	9	---
73. Business Services.....	1,483	295	711	26	188	259	719	89	92	---
74. Research & Development.....	---	---	---	---	---	---	50	2	---	---
75. Automobile Repair & Services.....	133	141	148	---	158	---	60	55	6	---
76. Amusements.....	97	---	37	6	---	---	102	---	---	---
77. Medical, Educational Services & Nonprofit Organizations.....	34	15	5	899	10	7	385	---	---	---
78. Federal Government Enterprises.....	345	4	856	---	---	4	20	10	6	---
79. State & Local Government Enterprises.....	541	27	11	---	24	2	18	2	1	---
80A. Directly Allocated Imports.....	---	---	---	---	---	110	10	182	---	---
80B. Transferred Imports.....	---	---	---	---	---	---	---	---	---	---
81. Business Travel, Entertainment & Gifts.....	86	174	253	19	33	95	510	53	18	---
82. Office Supplies.....	33	23	309	---	---	8	106	32	37	---
83. Scrap, Used & Secondhand Goods.....	---	33	---	---	54	---	---	---	---	---
84. Government Industry.....	---	---	---	---	---	---	---	---	---	---
85. Rest of the World Industry.....	---	---	---	---	---	---	---	---	---	---
86. Household Industry.....	---	---	---	---	---	---	---	---	---	---
87. Inventory Valuation Adjustment.....	---	---	---	---	---	---	---	---	---	---
I. Intermediate Inputs, Total.....	19,886	5,570	16,062	6,772	4,646	3,055	8,559	3,140	2,744	---
V.A. Value Added.....	53,347	8,916	14,400	523	4,551	3,758	19,331	1,830	3,443	---
T. Total.....	73,233	14,486	30,462	7,295	9,197	6,812	27,890	4,970	6,187	---
TR. Transfers.....	7,830	1	9,560	6,022	23	---	---	---	---	---

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)
[in millions of 1961 dollars at producers' prices]

	Business travel, entertainment and gifts	Office supplies	Scrap, used and second-hand goods	Government industry	Rest of the world industry	Household industry	Inventory valuation adjustment	Intermediate outputs, total	Final Demand	
									Personal consumption expenditures	Gross private fixed capital formation
	01	02	03	04	05	06	07			
1. Livestock & Livestock Products.....	26	-----	-----	-----	-----	-----	-----	23,523	2,064	-----
2. Other Agricultural Products.....	73	-----	-----	-----	-----	-----	-----	19,497	2,592	-----
3. Forestry & Fishery Products.....	17	-----	-----	-----	-----	-----	-----	1,410	315	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	1,669	-----	-----
5. Iron & Ferrous Ore Mining.....	-----	-----	-----	-----	-----	-----	-----	1,330	-----	-----
6. Nonferrous Metal Ore Mining.....	-----	-----	-----	-----	-----	-----	-----	1,314	-----	-----
7. Coal Mining.....	-----	-----	-----	-----	-----	-----	-----	2,068	146	-----
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	11,797	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----	-----	-----	-----	-----	-----	1,846	18	-----
10. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	-----	-----	-----	-----	562	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	40,634
12. Maintenance & Repair Construction.....	-----	-----	-----	-----	-----	-----	-----	13,661	-----	-----
13. Ordnance & Accessories.....	6	-----	-----	-----	-----	-----	-----	2,681	198	-----
14. Food & Kindred Products.....	2,164	-----	2	-----	-----	-----	-----	19,446	48,587	-----
15. Tobacco Manufactures.....	199	-----	2	-----	-----	-----	-----	1,437	4,756	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	-----	-----	129	-----	-----	-----	-----	11,011	826	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	-----	-----	-----	-----	-----	-----	-----	2,103	856	50
18. Apparel.....	4	-----	11	-----	-----	-----	-----	3,149	12,452	-----
19. Miscellaneous Fabricated Textile Products.....	-----	-----	3	-----	-----	-----	-----	1,264	1,304	-----
20. Lumber & Wood Products, Except Containers.....	2	-----	-----	-----	-----	-----	-----	8,651	130	-----
21. Wooden Containers.....	-----	-----	-----	-----	-----	-----	-----	465	-----	-----
22. Household Furniture.....	-----	-----	-----	-----	-----	-----	-----	704	2,539	131
23. Other Furniture & Fixtures.....	-----	-----	-----	-----	-----	-----	-----	387	154	437
24. Paper & Allied Products, Except Containers.....	4	199	-----	-----	-----	-----	-----	10,395	970	-----
25. Paperboard Containers & Boxes.....	-----	-----	33	-----	-----	-----	-----	4,083	41	-----
26. Printing & Publishing.....	7	960	-----	-----	-----	-----	-----	11,522	3,018	-----
27. Chemicals & Selected Chemical Products.....	-----	11	-----	-----	-----	-----	-----	12,406	224	-----
28. Plastics & Synthetic Materials.....	-----	-----	-----	-----	-----	-----	-----	4,535	11	-----
29. Drugs, Cleaning & Toilet Preparations.....	42	-----	-----	-----	-----	-----	-----	2,558	4,489	-----
30. Paints & Allied Products.....	-----	-----	-----	-----	-----	-----	-----	2,034	22	-----
31. Petroleum Refining & Related Industries.....	-----	-----	-----	-----	-----	-----	-----	10,370	8,114	-----
32. Rubber & Miscellaneous Plastics Products.....	2	11	6	-----	-----	-----	-----	6,152	1,588	58
33. Leather Tanning & Industrial Leather Products.....	-----	-----	-----	-----	-----	-----	-----	969	-----	-----
34. Footwear & Other Leather Products.....	27	-----	2	-----	-----	-----	-----	467	2,863	5
35. Glass & Glass Products.....	27	1	-----	-----	-----	-----	-----	2,419	127	-----
36. Stone & Clay Products.....	2	-----	-----	-----	-----	-----	-----	8,187	236	-----
37. Primary Iron & Steel Manufacturing.....	-----	2	174	-----	-----	-----	-----	21,185	18	-----
38. Primary Nonferrous Metal Manufacturing.....	-----	-----	90	-----	-----	-----	-----	11,514	12	-----
39. Metal Containers.....	-----	-----	12	-----	-----	-----	-----	2,288	-----	9
40. Heating, Plumbing & Structural Metal Products.....	-----	-----	31	-----	-----	-----	-----	7,397	63	636
41. Stampings, Screw Machine Products & Bolts.....	-----	-----	55	-----	-----	-----	-----	3,791	242	-----
42. Other Fabricated Metal Products.....	-----	5	29	-----	-----	-----	-----	6,413	455	151
43. Engines & Turbines.....	-----	-----	3	-----	-----	-----	-----	1,008	145	460
44. Farm Machinery & Equipment.....	-----	-----	9	-----	-----	-----	-----	764	9	1,535
45. Construction, Mining & Oil Field Machinery.....	-----	-----	13	-----	-----	-----	-----	1,075	-----	1,271
46. Materials Handling Machinery & Equipment.....	-----	-----	-----	-----	-----	-----	-----	609	-----	385
47. Metalworking Machinery & Equipment.....	-----	-----	12	-----	-----	-----	-----	2,437	37	1,296
48. Special Industry Machinery & Equipment.....	-----	-----	36	-----	-----	-----	-----	900	22	1,794
49. General Industrial Machinery & Equipment.....	-----	-----	20	-----	-----	-----	-----	2,745	-----	1,136
50. Machine Shop Products.....	-----	-----	54	-----	-----	-----	-----	1,894	-----	-----
51. Office, Computing & Accounting Machines.....	-----	8	20	-----	-----	-----	-----	1,308	72	1,204
52. Service Industry Machines.....	-----	-----	11	-----	-----	-----	-----	979	310	1,094
53. Electric Industrial Equipment & Apparatus.....	-----	-----	9	-----	-----	-----	-----	3,728	18	1,788
54. Household Appliances.....	30	-----	-----	-----	-----	-----	-----	1,052	2,530	91
55. Electric Lighting & Wiring Equipment.....	-----	-----	-----	-----	-----	-----	-----	2,302	404	29
56. Radio, Television & Communication Equipment.....	41	-----	157	-----	-----	-----	-----	2,883	1,597	1,454
57. Electronic Components & Accessories.....	-----	-----	-----	-----	-----	-----	-----	3,205	186	27
58. Misc. Electrical Machinery, Equipment & Supplies.....	-----	-----	8	-----	-----	-----	-----	1,294	305	97
59. Motor Vehicles & Equipment.....	-----	-----	168	-----	-----	-----	-----	11,806	11,439	4,542
60. Aircraft & Parts.....	-----	-----	26	-----	-----	-----	-----	6,082	37	708
61. Other Transportation Equipment.....	-----	-----	4	-----	-----	-----	-----	1,112	845	928
62. Scientific & Controlling Instruments.....	10	-----	64	-----	-----	-----	-----	2,543	408	734
63. Optical, Ophthalmic & Photographic Equipment.....	14	16	1	-----	-----	-----	-----	897	580	710
64. Miscellaneous Manufacturing.....	49	258	32	-----	-----	-----	-----	2,901	3,074	316
65. Transportation & Warehousing.....	2,979	-----	42	-----	-----	-----	-----	23,915	9,142	587
66. Communications, Except Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	5,363	4,842	545
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	1,892	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	-----	-----	-----	-----	-----	-----	-----	14,866	10,047	-----
69. Wholesale & Retail Trade.....	388	-----	4	-----	-----	-----	-----	31,380	71,530	4,453
70. Finance & Insurance.....	-----	-----	4	-----	-----	-----	-----	17,451	15,197	-----
71. Real Estate & Rental.....	-----	-----	-----	-----	-----	-----	-----	24,083	47,225	1,137
72. Hotels; Personal & Repair Services exc. Auto.....	1,184	-----	-----	-----	-----	-----	-----	7,745	11,386	-----
73. Business Services.....	-----	-----	-----	-----	-----	-----	-----	26,453	2,427	-----
74. Research & Development.....	-----	-----	-----	-----	-----	-----	-----	208	-----	-----
75. Automobile Repair & Services.....	-----	-----	-----	-----	-----	-----	-----	5,980	4,973	-----
76. Amusements.....	163	-----	-----	-----	-----	-----	-----	2,496	3,926	-----
77. Medical, Educational Services & Nonprofit Organizations.....	42	-----	-----	-----	-----	-----	-----	2,537	24,770	-----
78. Federal Government Enterprises.....	-----	-----	-----	-----	-----	-----	-----	1,977	761	-----
79. State & Local Government Enterprises.....	-----	-----	-----	-----	-----	-----	-----	5,620	396	-----
80A. Directly Allocated Imports.....	-----	-----	-----	-----	-----	-----	-----	1,386	4,406	25
80B. Transferred Imports ¹	201	-----	336	-----	605	-----	-----	12,592	-----	-----
81. Business Travel, Entertainment & Gifts.....	-----	-----	-----	-----	-----	-----	-----	7,671	-----	-----
82. Office Supplies.....	-----	-----	-----	-----	-----	-----	-----	1,419	-----	-----
83. Scrap, Used & Secondhand Goods.....	-----	-----	-----	-----	-----	-----	-----	1,339	-24	-766
84. Government Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
85. Rest of the World Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	-1,230	-----
86. Household Industry.....	-----	-----	-----	-----	-----	-----	-----	-----	3,733	-----
87. Inventory Valuation Adjustment.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
I. Intermediate Inputs, Total.....	7,671	1,671	1,616	-----	605	-----	-----	-----	-----	-----
V.A. Value Added.....	-----	-----	-----	67,128	2,942	3,733	-19	-----	-----	-----
T. Total.....	7,671	1,671	1,616	67,121	3,947	3,733	-19	-----	65,152	67,121
T.R. Transfers ²	7,671	1,671	1,616	-----	605	-----	-----	-----	-----	-----

TABLE C-33.—UNITED STATES 1961 GROSS FLOWS (Cont.)
 [In millions of 1961 dollars at producers' prices]

	Final Demand—Continued					Total
	Net inventory change	Net exports ³	Federal Government purchases	State and local government purchases	Total final demand	
For the distribution of output of an industry, read the row for that industry.						
For the composition of inputs to an industry, read the column for that industry.						
1. Livestock & Livestock Products.....	419	37	—3	13	2,931	26,053
2. Other Agricultural Products.....	100	2,631	—433	32	4,921	24,419
3. Forestry & Fishery Products.....	-----	40	—138	-----	217	1,627
4. Agricultural, Forestry & Fishery Services.....	-----	7	47	—88	—34	1,635
5. Iron & Ferroalloy Ores Mining.....	—20	86	-----	-----	66	1,396
6. Nonferrous Metal Ores Mining.....	—2	20	195	-----	213	1,527
7. Coal Mining.....	—20	223	-----	76	425	2,493
8. Crude Petroleum & Natural Gas.....	61	25	-----	-----	86	11,882
9. Stone and Clay Mining and Quarrying.....	—11	30	8	—16	29	1,875
10. Chemical & Fertilizer Mineral Mining.....	29	60	9	15	113	675
11. New Construction.....	-----	2	3,879	11,269	57,784	57,784
12. Maintenance & Repair Construction.....	-----	-----	1,240	3,908	5,148	18,809
13. Ordnance & Accessories.....	—34	13	1,947	4	2,127	4,608
14. Food & Kindred Products.....	641	1,437	216	355	51,735	70,682
15. Tobacco Manufactures.....	170	515	-----	-----	5,441	6,894
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	89	212	49	12	1,188	12,199
17. Miscellaneous Textile Goods & Floor Coverings.....	—66	33	4	2	878	2,981
18. Apparel.....	—73	146	38	119	12,682	15,830
19. Miscellaneous Fabricated Textile Products.....	—31	24	116	-----	1,413	2,677
20. Lumber & Wood Products, Except Containers.....	—66	154	—6	-----	217	8,866
21. Wooden Containers.....	—1	3	2	-----	4	469
22. Household Furniture.....	—1	15	25	76	2,787	3,491
23. Other Furniture & Fixtures.....	15	14	26	163	1,309	1,696
24. Paper & Allied Products, Except Containers.....	160	396	68	8	1,602	11,997
25. Paperboard Containers & Boxes.....	15	21	5	-----	82	4,165
26. Printing & Publishing.....	104	140	93	233	3,588	15,110
27. Chemicals & Selected Chemical Products.....	70	948	700	305	2,267	14,654
28. Plastics & Synthetic Materials.....	43	548	5	-----	607	5,141
29. Drugs, Cleaning & Toilet Preparations.....	96	362	122	218	5,287	7,845
30. Paints & Allied Products.....	15	26	3	-----	66	2,100
31. Petroleum Refining & Related Industries.....	43	426	703	505	9,991	20,361
32. Rubber & Miscellaneous Plastics Products.....	—19	213	105	91	2,037	8,188
33. Leather Tanning & Industrial Leather Products.....	5	45	-----	-----	50	1,018
34. Footwear & Other Leather Products.....	8	29	24	2	2,932	3,399
35. Glass & Glass Products.....	6	74	2	-----	210	2,628
36. Stone & Clay Products.....	36	113	5	5	395	8,582
37. Primary Iron & Steel Manufacturing.....	312	441	111	2	884	22,069
38. Primary Nonferrous Metal Manufacturing.....	18	441	323	-----	794	12,308
39. Metal Containers.....	22	26	17	-----	74	2,362
40. Heating, Plumbing & Structural Metal Products.....	58	164	2	-----	923	8,320
41. Stampings, Screw Machine Products & Bolts.....	15	33	91	6	388	4,178
42. Other Fabricated Metal Products.....	24	282	112	62	1,086	7,499
43. Engines & Turbines.....	—55	211	216	3	981	1,989
44. Farm Machinery & Equipment.....	—66	215	6	23	1,722	2,486
45. Construction, Mining & Oil Field Machinery.....	—58	834	83	29	2,159	3,235
46. Materials Handling Machinery & Equipment.....	—31	79	136	67	636	1,245
47. Metalworking Machinery & Equipment.....	10	480	177	8	2,007	4,444
48. Special Industry Machinery & Equipment.....	58	530	29	39	2,472	3,372
49. General Industrial Machinery & Equipment.....	—23	306	197	6	1,623	4,368
50. Machine Shop Products.....	—9	6	40	45	82	1,976
51. Office, Computing & Accounting Machines.....	176	307	73	116	1,953	3,261
52. Service Industry Machines.....	—39	176	58	26	1,424	2,605
53. Electric Industrial Equipment & Apparatus.....	26	337	176	8	2,353	6,081
54. Household Appliances.....	42	161	19	-----	2,843	3,895
55. Electric Lighting & Wiring Equipment.....	16	66	17	10	543	2,846
56. Radio, Television & Communication Equipment.....	436	320	2,496	112	6,415	9,297
57. Electronic Components & Accessories.....	53	128	217	-----	611	3,816
58. Misc. Electrical Machinery, Equipment & Supplies.....	3	81	88	42	616	1,910
59. Motor Vehicles & Equipment.....	—477	473	285	565	17,327	29,134
60. Aircraft & Parts.....	—117	764	6,432	-----	7,819	13,902
61. Other Transportation Equipment.....	—68	208	727	49	2,710	3,822
62. Scientific & Controlling Instruments.....	13	276	826	116	2,373	4,916
63. Optical, Ophthalmic & Photographic Equipment.....	17	124	136	19	1,086	1,983
64. Miscellaneous Manufacturing.....	—175	154	35	231	3,635	6,536
65. Transportation & Warehousing.....	-----	2,407	1,064	501	13,871	37,784
66. Communications, Except Radio & TV Broadcasting.....	-----	75	168	254	5,883	11,247
67. Radio & TV Broadcasting.....	-----	16	-----	-----	16	1,908
68. Electric, Gas, Water & Sanitary Services.....	-----	29	361	469	11,106	25,974
69. Wholesale & Retail Trade.....	-----	1,484	650	249	78,766	110,145
70. Finance & Insurance.....	-----	24	1	269	15,491	32,943
71. Real Estate & Rental.....	-----	357	112	316	49,147	73,230
72. Hotels; Personal & Repair Services exc. Auto.....	-----	-----	239	116	11,741	14,486
73. Business Services.....	-----	258	564	759	4,008	30,462
74. Research & Development.....	-----	-----	7,087	-----	7,087	7,295
75. Automobile Repair & Services.....	-----	-----	131	113	5,217	9,197
76. Amusements.....	160	273	19	—63	4,315	6,812
77. Medical, Educational Services & Nonprofit Organizations.....	-----	8	125	450	25,153	27,890
78. Federal Government Enterprises.....	-----	75	60	95	993	4,970
79. State & Local Government Enterprises.....	-----	—3	166	8	567	6,187
80A. Directly Allocated Imports.....	—184	—10,356	2,524	3	—3,388	-----
80B. Transferred Imports.....	-----	—12,592	-----	-----	—12,592	-----
81. Business Travel, Entertainment & Gifts.....	-----	-----	-----	-----	-----	7,671
82. Office Supplies.....	-----	-----	74	178	252	1,671
83. Scrap, Used & Secondhand Goods.....	85	431	111	440	277	1,616
84. Government Industry.....	-----	-----	22,154	24,969	47,123	47,123
85. Rest of the World Industry.....	-----	5,150	—383	-----	3,537	3,537
86. Household Industry.....	-----	-----	-----	-----	3,733	3,733
87. Inventory Valuation Adjustment.....	—19	-----	-----	-----	—19	—19
1. Intermediate Inputs, Total.....	-----	-----	-----	-----	-----	-----
V.A. Value Added.....	-----	-----	-----	-----	-----	520,097
T. Total.....	2,022	5,421	57,408	50,717	520,097	-----
TR. Transfers ²	-----	-----	-----	-----	-----	-----

TABLE C34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS
(Producers' prices, 1961 dollars)

	For the composition of inputs to an industry, read the column for that industry.									
	Livestock and live-stock products	Other agricultural products	Forestry and fishery products	Agricultural, forestry and fishery services	Iron and nonferrous ores mining	Nonferrous metal ores mining	Coal mining	Crude petroleum and natural gas	Stone and clay mining and quarrying	Chemical and fertilizer mineral mining
	1	2	3	4	5	6	7	8	9	10
1. Livestock & Livestock Products.....	.15507	.07189	.07083	.12702	-----	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	.26630	.03063	.08476	.35865	-----	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	.01398	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	.01979	.03853	.01284	.00116	-----	-----	-----	-----	-----	-----
5. Iron & Nonferrous Ores Mining.....	-----	-----	-----	-----	.05435	.00932	-----	-----	.00031	.00040
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	.03225	.16897	-----	-----	.00073	.00035
7. Coal Mining.....	.00022	.00002	-----	-----	.00310	.00077	.17547	.00001	.00127	.00064
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	.00006	.00054	.02612	.00778	.00245
9. Stone and Clay Mining and Quarrying.....	.00003	.00305	-----	-----	-----	.00087	.00002	-----	.00039	.01729
10. Chemical & Fertilizer Mineral Mining.....	-----	.00123	.00004	-----	-----	-----	-----	-----	-----	.06096
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00914	.01536	.00021	.00120	.00055	.00095	.00087	.00038	.00116	.00056
13. Ordnance & Accessories.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
14. Food & Kindred Products.....	.12481	.00012	.01799	.00492	-----	-----	-----	-----	-----	.00011
15. Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	-----	.00030	-----	-----	.00013	.00148	.00069	-----	-----	.00032
17. Miscellaneous Textile Goods & Floor Coverings.....	.00026	.00132	.00891	.01043	-----	-----	-----	.00021	.00004	-----
18. Apparel.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
19. Miscellaneous Fabricated Textile Products.....	.00037	.00194	-----	-----	-----	-----	-----	-----	-----	-----
20. Lumber & Wood Products, Except Containers.....	.00008	.00007	-----	-----	.00520	.00108	.00698	.00053	.00002	.00040
21. Wooden Containers.....	-----	.00367	-----	.00004	-----	-----	-----	-----	-----	-----
22. Household Furniture.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
23. Other Furniture & Fixtures.....	-----	-----	-----	.00125	-----	-----	-----	-----	-----	-----
24. Paper & Allied Products, Except Containers.....	-----	.00540	.00125	.00002	.00041	-----	.00225	.00042	.00785	.00495
25. Paperboard Containers & Boxes.....	.00056	.00011	.00614	.00384	-----	-----	.00056	.00005	.00182	.00087
26. Printing & Publishing.....	.00021	.00031	.00006	.00002	.00004	.00034	.00028	.00008	.00032	.00005
27. Chemicals & Selected Chemical Products.....	.00146	.05199	.00012	.00021	.01273	.03642	.01822	.00464	.01193	.03166
28. Plastics & Synthetic Materials.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
29. Drugs, Cleaning & Toilet Preparations.....	.00114	-----	-----	.00003	.00001	.00009	-----	.00007	.00012	.00018
30. Paints & Allied Products.....	-----	-----	.00126	-----	.00001	.00017	.00034	.00048	-----	-----
31. Petroleum Refining & Related Industries.....	.00192	.03741	.01226	.00164	.00926	.00680	.01141	.00484	.02769	.00462
32. Rubber & Miscellaneous Plastics Products.....	.00087	.00666	.00624	.00116	.00055	.00312	.00885	.00335	.01961	.00489
33. Leather Tanning & Industrial Leather Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
34. Footwear & Other Leather Products.....	.00004	.00016	.00001	-----	-----	-----	-----	-----	-----	.00001
35. Glass & Glass Products.....	.00014	-----	-----	-----	-----	-----	-----	.00004	-----	-----
36. Stone & Clay Products.....	.00005	.00113	-----	-----	.00073	.00535	.00242	.00039	.06309	.00053
37. Primary Iron & Steel Manufacturing.....	-----	-----	-----	-----	.01660	.04201	.00857	.00028	.01374	.01840
38. Primary Nonferrous Metal Manufacturing.....	.00004	.00004	-----	-----	.00170	.00552	.00654	.00071	.00114	.00135
39. Metal Containers.....	.00021	.00062	-----	-----	-----	-----	-----	-----	-----	-----
40. Heating, Plumbing & Structural Metal Products.....	-----	-----	-----	-----	.00098	.00036	.00038	.00057	.00001	.00017
41. Stampings, Screw Machine Products & Bolts.....	.00082	-----	-----	-----	.00024	.00046	.00557	.00050	.00013	.00071
42. Other Fabricated Metal Products.....	.00118	.00163	.00045	.00557	.00075	.00109	.00524	.00468	.00059	.00085
43. Engines & Turbines.....	-----	-----	.00007	-----	.00029	.00037	-----	.00120	-----	.00026
44. Farm Machinery & Equipment.....	.00021	.00870	-----	-----	-----	-----	-----	-----	.00001	.02410
45. Construction, Mining & Oil Field Machinery.....	-----	-----	-----	-----	.01953	.02198	.03478	.00325	.04299	-----
46. Materials Handling Machinery & Equipment.....	-----	-----	-----	-----	.00002	.00012	.00446	-----	.01504	.00568
47. Metalworking Machinery & Equipment.....	-----	-----	-----	-----	.00007	.00057	.00357	-----	.00007	.00002
48. Special Industry Machinery & Equipment.....	-----	-----	-----	-----	-----	-----	-----	.00084	-----	-----
49. General Industrial Machinery & Equipment.....	.00009	.00013	-----	-----	.00020	.00207	.00187	.00824	.00346	.06153
50. Machine Shop Products.....	-----	-----	-----	-----	.00007	.00009	.00024	.00008	.00035	.00020
51. Office, Computing & Accounting Machines.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
52. Service Industry Machines.....	-----	-----	-----	-----	.00073	.00423	.00215	.00337	.00195	.00131
53. Electric Industrial Equipment & Apparatus.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
54. Household Appliances.....	.00004	.00004	.00008	-----	.00035	.00047	.00161	.00007	.00008	.00005
55. Electric Lighting & Wiring Equipment.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
56. Radio, Television & Communication Equipment.....	-----	-----	-----	-----	.00123	-----	-----	.00097	-----	-----
57. Electronic Components & Accessories.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00033	.00098	-----	-----	.00021	.00015	.00010	.00011	.00017	.00010
59. Motor Vehicles & Equipment.....	.00098	.00147	-----	-----	.00048	.00082	.00215	.00085	.00374	.00224
60. Aircraft & Parts.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
61. Other Transportation Equipment.....	-----	.00015	.01542	-----	.00247	-----	.00497	-----	.00019	.00041
62. Scientific & Controlling Instruments.....	-----	-----	-----	-----	.00018	.00038	.00006	.00006	.00021	.00014
63. Optical, Ophthalmic & Photographic Equipment.....	-----	-----	-----	-----	.00005	.00006	-----	-----	.00006	.00006
64. Miscellaneous Manufacturing.....	.00005	.00002	.00161	.00031	.00001	.00001	.00143	.00004	.00035	.00020
65. Transportation & Warehousing.....	.02167	.01736	.01610	.00704	.08553	.02946	.00789	.02433	.01563	.06688
66. Communications; Except Radio & TV Broadcasting.....	.00223	.00315	.00219	.00423	.00144	.00165	.00077	.00024	.00170	.00197
67. Radio & TV Broadcasting.....	.00391	.00772	.00031	.00073	.01540	.02657	.02439	.00797	.02522	.04635
68. Electric, Gas, Water & Sanitary Services.....	.03832	.04392	.01540	.00278	.01899	.02578	.03620	.01292	.03843	.02719
69. Wholesale & Retail Trade.....	.00836	.01320	.02117	.00457	.00578	.01511	.01109	.01101	.01169	.00674
70. Finance & Insurance.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
71. Real Estate & Rental.....	.01273	.08142	.02744	.01091	.07162	.03345	.02428	.14000	.02663	.01141
72. Hotels; Personal & Repair Services exc. Auto.....	-----	-----	-----	-----	.00079	.00087	.00024	.00004	.00093	.00085
73. Business Services.....	.00210	.03748	.07451	.00349	.00564	.00718	.00566	.03571	.00470	.00807
74. Research & Development.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
75. Automobile Repair & Services.....	.00265	.00732	-----	-----	-----	-----	.00040	.00146	.00024	-----
76. Amusements.....	-----	-----	-----	-----	.00007	.00002	.00001	-----	.00002	.00002
77. Medical, Educational Services & Nonprofit Organizations.....	.00465	.00059	.00067	.00065	.00084	.00101	.00117	.00101	.00104	.00101
78. Federal Government Enterprises.....	.00017	.00015	.00068	.00072	.00076	.00092	.00115	-----	.00068	.00092
79. State & Local Government Enterprises.....	.00002	.00004	.00008	.00014	.00010	.00039	.00030	.00052	.00116	.00040
80. Gross Imports of Goods & Services.....	.00089	.01745	.19549	.00006	.25727	.13223	.00056	.07919	.05519	.10781
81. Business Travel, Entertainment & Gifts.....	.00073	.00116	.00083	.00078	.00435	.00453	.00417	.00446	.00483	.00426
82. Office Supplies.....	.00004	.00010	.00034	.00007	.00020	.00021	.00025	.00029	.00024	.00045
A. Adjustment for Scrap and By-Products.....	-.00191	-----	-----	-----	.00215	.00037	.00129	.00065	.00154	.00089
V.A. Value Added.....	.30906	.49904	.38803	.44740	.36203	.40344	.54761	.60473	.57663	.50972
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)
[Producers' prices, 1961 dollars]

For the composition of inputs to an industry, read the column for that industry.

	New construction	Maintenance and repair construction	Ordinance and accessories	Food and kindred products	Tobacco manufactures	Broad and narrow fabrics, yarn and thread mills	Miscellaneous textile goods and floor coverings	Apparel	Miscellaneous fabricated textile products	Lumber and wood products, except containers
	11	12	13	14	15	16	17	18	19	20
1. Livestock & Livestock Products.....	-----	-----	-----	.22901	-----	.01068	.02477	-----	-----	-----
2. Other Agricultural Products.....	.00445	-----	-----	.07634	.18680	.10849	.00596	.00054	-----	.01936
3. Forestry & Fishery Products.....	-----	-----	-----	.00429	-----	-----	-----	.01240	.00037	.09278
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	.00109
5. Iron & Ferrous Alloy Ores Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
7. Coal Mining.....	*	-----	.00027	.00055	-----	-----	-----	-----	-----	.00003
8. Crude Petroleum & Natural Gas.....	*	-----	-----	-----	.00021	.00113	.00045	.00012	.00008	.00020
9. Stone and Clay Mining and Quarrying.....	.01260	.00787	-----	.00006	-----	-----	.00002	-----	-----	.00002
10. Chemical & Fertilizer Mineral Mining.....	.01260	-----	-----	.00013	-----	.00006	.00001	.00002	-----	.00001
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00013	.00005	-----	.00351	.00005	.00062	.00015	.00054	.00014	.00178
13. Ordnance & Accessories.....	.00010	-----	.01710	-----	-----	-----	-----	-----	*	-----
14. Food & Kindred Products.....	.00031	-----	-----	.17427	.00603	.00232	.00135	-----	-----	.00001
15. Tobacco Manufactures.....	-----	-----	-----	.00001	.18682	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	-----	-----	-----	.00010	.00018	.34444	.15549	.26533	.42552	*
17. Miscellaneous Textile Goods & Floor Coverings.....	.00008	.00007	.00012	.00001	-----	.02493	.10572	.00639	.07722	.00023
18. Apparel.....	-----	-----	.00051	.00098	-----	.00137	.00265	.16312	.00873	.00124
19. Miscellaneous Fabricated Textile Products.....	.00001	.00004	.00194	-----	-----	.00332	.00466	.01217	.06285	.00019
20. Lumber & Wood Products, Except Containers.....	.05958	.02778	.00023	.00006	.00022	.00013	.00001	-----	.00001	.27996
21. Wooden Containers.....	-----	-----	.00079	.00140	.00138	-----	-----	.00001	-----	.00337
22. Household Furniture.....	.00544	-----	.00001	-----	-----	-----	-----	-----	-----	.00236
23. Other Furniture & Fixtures.....	.00335	.00077	-----	-----	-----	.00002	.00296	*	.00308	.00037
24. Paper & Allied Products, Except Containers.....	.00552	.00381	.00129	.00585	.01139	.00151	.00854	.00096	.01263	.00689
25. Paperboard Containers & Boxes.....	-----	-----	.00305	.01370	.01135	.00777	.00597	.00614	.00919	.00429
26. Printing & Publishing.....	.00015	.00007	.00187	.00197	.00215	.00078	.00048	.00097	.00123	.00391
27. Chemicals & Selected Chemical Products.....	.00701	.00410	.00222	.00381	.00084	.01559	.00294	.00296	.00011	.00721
28. Plastics & Synthetic Materials.....	-----	-----	.00021	.01778	.08369	.14063	.00978	-----	-----	.00698
29. Drugs, Cleaning & Toilet Preparations.....	-----	-----	.00056	.00320	.00122	.00214	.00044	.00009	.00065	.00114
30. Paints & Allied Products.....	.00361	.05054	.00046	.00009	.00003	.00035	.00045	.00002	.00018	.00471
31. Petroleum Refining & Related Industries.....	.01899	.02148	.00197	.00443	.00044	.00244	.00166	.00040	.00089	.00903
32. Rubber & Miscellaneous Plastics Products.....	.00615	.00395	.02403	.00729	.00151	.00413	.01227	.00165	.02894	.00651
33. Leather Tanning & Industrial Leather Products.....	-----	-----	-----	*	.00004	.00017	.00012	.00279	.00001	-----
34. Footwear & Other Leather Products.....	.00001	*	.00003	*	-----	.00003	.00033	.00077	.00246	.00007
35. Glass & Glass Products.....	.00162	.00462	.00084	.00950	-----	.00229	.00078	*	.00002	.00119
36. Stone & Clay Products.....	.07860	.03243	.00247	.00005	.00001	.00017	.00072	.00001	-----	.00394
37. Primary Iron & Steel Manufacturing.....	.03982	.01568	.01128	.00002	-----	.00037	.00031	.00007	.00030	.00004
38. Primary Nonferrous Metal Manufacturing.....	.01629	.01650	.04589	.00059	.00118	.00025	.00023	-----	.00004	.00125
39. Metal Containers.....	-----	-----	-----	.02401	.00126	-----	*	-----	-----	-----
40. Heating, Plumbing & Structural Metal Products.....	.09278	.04740	.00231	-----	-----	.00004	-----	-----	.00001	.00038
41. Stampings, Screw Machine Products & Bolts.....	.00159	.00113	.00582	.00253	.00005	.00011	.00010	-----	.00025	.00248
42. Other Fabricated Metal Products.....	.01544	.00293	.00944	.00135	.00147	.00084	.00145	.00125	.00211	.00809
43. Engines & Turbines.....	.00003	.00002	.00081	-----	-----	-----	-----	-----	-----	-----
44. Farm Machinery & Equipment.....	.00004	-----	.00062	-----	-----	-----	.00033	-----	-----	.00003
45. Construction, Mining & Oil Field Machinery.....	.00275	.00112	.00025	-----	-----	-----	-----	-----	-----	*
46. Materials Handling Machinery & Equipment.....	.00558	.00051	.00001	-----	-----	-----	*	-----	-----	.00050
47. Metalworking Machinery & Equipment.....	.00002	.00001	.01005	.00021	.00005	.00020	.00019	.00001	.00017	.00015
48. Special Industry Machinery & Equipment.....	-----	-----	.00150	-----	-----	.00588	.00063	-----	-----	.00158
49. General Industrial Machinery & Equipment.....	.00561	.00111	.00558	.00003	.00004	.00012	.00011	.00002	.00052	.00134
50. Machine Shop Products.....	.00005	.00003	.08329	.00002	.00002	.00003	.00003	*	.00008	.00036
51. Office, Computing & Accounting Machines.....	-----	-----	.00162	-----	-----	-----	-----	-----	.00001	-----
52. Service Industry Machines.....	.00379	.00119	.00366	*	-----	-----	-----	-----	.00001	*
53. Electric Industrial Equipment & Apparatus.....	.00853	.00487	.01955	.00014	.00001	.00006	.00006	.00001	-----	.00004
54. Household Appliances.....	.00300	.00271	.00012	-----	-----	-----	-----	-----	-----	.00001
55. Electric Lighting & Wiring Equipment.....	.01615	.00763	.01092	.00036	.00010	.00025	.00019	-----	.00004	.00128
56. Radio, Television & Communication Equipment.....	.00067	.00140	.03610	-----	-----	-----	-----	-----	-----	-----
57. Electronic Components & Accessories.....	.00003	.00001	.00063	-----	-----	-----	-----	-----	-----	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00030	.00030	.00020	.00006	.00001	.00001	.00001	-----	.00001	.00010
59. Motor Vehicles & Equipment.....	.00002	.00001	.00436	-----	-----	-----	.00030	-----	-----	.00006
60. Aircraft & Parts.....	-----	-----	.22579	-----	-----	-----	.00025	-----	.00031	.00003
61. Other Transportation Equipment.....	.00005	-----	.00337	-----	-----	-----	-----	*	-----	.00095
62. Scientific & Controlling Instruments.....	.00409	.00104	.02435	*	-----	.00002	.00002	.00024	.00385	.00002
63. Optical, Ophthalmic & Photographic Equipment.....	-----	*	.00042	-----	-----	.00002	-----	.00001	-----	-----
64. Miscellaneous Manufacturing.....	.00186	.00306	.00245	.00051	.00119	.00171	.01002	.01940	.01769	.00181
65. Transportation & Warehousing.....	.03372	.01735	.00999	.04192	.01285	.02538	.03271	.00866	.00940	.05337
66. Communications; Except Radio & TV Broadcasting.....	.00204	.00106	.00413	.00257	.00038	.00164	.00251	.00310	.00235	.00269
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	.00326	.00141	.00434	.00596	.00096	.01135	.00691	.00324	.00340	.00695
69. Wholesale & Retail Trade.....	.09651	.07896	.02741	.03743	.01476	.03459	.04887	.03617	.04496	.04499
70. Finance & Insurance.....	.00832	.00305	.00640	.00585	.00217	.00660	.00880	.00723	.00468	.00693
71. Real Estate & Rental.....	.00420	.00213	.00427	.00488	.00132	.00486	.00725	.01216	.01088	.00704
72. Hotels; Personnel & Repair Services exc. Auto.....	-----	-----	.00075	.00058	.00040	.00159	.00110	.00253	.00147	.00183
73. Business Services.....	.05387	.00381	.01694	.02796	.04828	.01020	.00799	.01048	.00672	.00628
74. Research & Development.....	-----	-----	.00009	-----	-----	-----	-----	-----	-----	-----
75. Automobile Repair & Services.....	.00529	.00138	-----	.00478	.00032	.00062	.00055	.00026	.00127	.00849
76. Amusements.....	-----	-----	.00003	.00002	.00001	.00003	.00003	.00006	.00003	.00004
77. Medical, Educational Services & Nonprofit Organizations.....	.00127	.00063	.00102	.00115	.00111	.00121	.00100	.00133	.00101	.00119
78. Federal Government Enterprises.....	-----	-----	.00087	.00053	.00230	.00086	.00129	.00203	.00147	.00045
79. State & Local Government Enterprises.....	.00341	.00016	.00016	.00059	.00007	.00029	.00026	.00011	.00035	.00083
80. Gross Imports of Goods & Services.....	-----	-----	.00317	.03429	.01284	.02679	.13557	.00443	.00303	.05978
81. Business Travel, Entertainment & Gifts.....	.00424	.00217	.01825	.00551	.00170	.00402	.00421	.00681	.00673	.00740
82. Office Supplies.....	.00024	.00014	.00103	.00047	.00016	.00049	.00043	.00075	.00058	.00040
83. Adjustment for Scrap and By-Products.....	.00087	.00045	-----	.00573	.00034	.01056	.01243	.00067	.00062	.00018
84. Value Added.....	.62515	.62506	.37765	.26393	.46682	.25136	.23434	.39314	.23973	.31181
Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)
[Producers' prices, 1961 dollars]

	For the composition of inputs to an industry, read the column for that industry.									
	Wooden containers	Household furniture	Other furniture and fixtures	Paper and allied products, except containers	Paperboard containers and boxes	Printing and publishing	Chemicals and selected chemical products	Plastics and synthetic materials	Drugs, cleaning, and toilet preparations	Paints and allied products
	21	22	23	24	25	26	27	28	29	30
1. Livestock & Livestock Products.....	-----	-----	-----	-----	-----	-----	-----	-----	.00071	-----
2. Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	.00116	-----	.00034	-----
3. Forestry & Fishery Products.....	-----	-----	-----	-----	-----	-----	.00175	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
5. Iron & Ferrous Alloy Ores Mining.....	-----	-----	-----	-----	-----	-----	.00434	-----	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	-----	-----	.00442	-----	.00006	.0000
7. Coal Mining.....	.00006	.00044	.00035	.00589	.00019	.00005	.00309	.00427	.00043	.00014
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	.00214	-----	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----	-----	.00352	-----	-----	.00170	.00012	.00058	.00041
10. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	.00153	-----	-----	.02769	.00012	.00001	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00009	.00053	.00029	.00384	.00358	.00323	.00048	.00650	.00025	.00031
13. Ordnance & Accessories.....	-----	-----	-----	-----	.00016	.00025	-----	-----	.00002	-----
14. Food & Kindred Products.....	-----	.00785	.00006	.00667	.00005	-----	.00693	.00388	.02650	.03141
15. Tobacco Manufactures.....	-----	-----	-----	.00001	.00001	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	-----	.05402	.00170	.00545	-----	.00005	.00008	.00102	.00010	.00021
17. Miscellaneous Textile Goods & Floor Coverings.....	-----	.01234	.00735	.00182	-----	.00127	.00022	.00030	-----	-----
18. Apparel.....	.00001	.00032	.00093	.00064	.00090	-----	.00042	.00048	.00035	.00034
19. Miscellaneous Fabricated Textile Products.....	-----	.00112	.00081	.00300	.00007	-----	.00324	-----	.00055	-----
20. Lumber & Wood Products, Except Containers.....	.37016	.11969	.05783	.06766	.00068	.00004	.00268	.00025	.00112	.00066
21. Wooden Containers.....	.03490	.00012	.00007	.00047	.00045	-----	.00023	.00021	-----	-----
22. Household Furniture.....	.00359	.01550	.03016	.00002	-----	-----	-----	.00001	-----	-----
23. Other Furniture & Fixtures.....	.00066	.00674	.00118	.00071	-----	.00037	-----	.00001	-----	-----
24. Paper & Allied Products, Except Containers.....	.00191	.00361	.00311	.17835	.41555	-----	.00901	.04534	.00876	.00710
25. Paperboard Containers & Boxes.....	.00133	.01788	.01830	.02802	.03986	.00458	.00583	.00595	.03073	.01075
26. Printing & Publishing.....	.00229	.00037	.00120	.01161	.00679	.12401	.00256	.00110	.00428	.00245
27. Chemicals & Selected Chemical Products.....	.00002	.00006	.00015	.03336	.00249	.01464	.02083	.36597	.13326	.23505
28. Plastics & Synthetic Materials.....	-----	.00031	.00104	.00835	.00304	-----	.01778	.02761	.00231	.12816
29. Drugs, Cleaning & Toilet Preparations.....	.00060	.00003	.00004	.00202	.00172	.00047	.01020	.01100	.06066	.01044
30. Paints & Allied Products.....	.00097	.02068	.01686	.00125	-----	-----	.00330	.00564	.00222	.00155
31. Petroleum Refining & Related Industries.....	.00635	.00207	.00197	.00140	.00685	.00084	.06389	.01221	.00889	.00868
32. Rubber & Miscellaneous Plastics Products.....	.00116	.04086	.00912	.01509	.00843	.00115	.00704	.02038	.01027	.00303
33. Leather Tanning & Industrial Leather Products.....	-----	.00136	.00160	-----	-----	-----	.00001	-----	-----	-----
34. Footwear & Other Leather Products.....	.00001	.00026	.00001	.00010	.00012	-----	.00001	-----	.00002	.00001
35. Glass & Glass Products.....	-----	.01387	.03670	.00005	.00240	-----	.00150	.00031	.02199	-----
36. Stone & Clay Products.....	.00160	.00254	.00168	.00460	.00006	.00001	.00318	.00046	.00191	.00978
37. Primary Iron & Steel Manufacturing.....	.04240	.02379	.09271	.00008	.00056	-----	.00500	-----	.00012	.00596
38. Primary Nonferrous Metal Manufacturing.....	-----	.00892	.01403	.00142	.00011	.00123	.01449	.00041	.00017	.00034
39. Metal Containers.....	.00003	.00001	-----	.00007	.00385	-----	.00691	.00129	.01657	.04697
40. Heating, Plumbing & Structural Metal Products.....	.00031	.00271	.01327	.00005	-----	-----	.00020	.00037	.00097	.00054
41. Stampings, Screw Machine Products & Bolts.....	.00209	.00462	.00706	.00150	.00099	.00023	.00094	.00078	.00307	.00043
42. Other Fabricated Metal Products.....	.00689	.05969	.03589	.01060	.00255	.00170	.00353	.00151	.00930	.00140
43. Engines & Turbines.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
44. Farm Machinery & Equipment.....	-----	-----	.00065	-----	-----	-----	.00002	-----	-----	.00013
45. Construction, Mining & Oil Field Machinery.....	-----	-----	.00036	-----	-----	.00003	-----	-----	-----	-----
46. Materials Handling Machinery & Equipment.....	-----	.00052	.00004	-----	-----	-----	.00052	-----	-----	-----
47. Metalworking Machinery & Equipment.....	.00032	.00095	.00254	.00077	.00058	-----	.00010	.00084	.00136	.00012
48. Special Industrial Machinery & Equipment.....	.00035	.00394	.00040	.00280	.00384	-----	.00961	.00142	.00234	.00002
49. General Industrial Machinery & Equipment.....	.00034	.00032	.00173	.00059	.00056	.00009	.00037	.00063	.00007	.00016
50. Machine Shop Products.....	.00038	.00012	.00021	.00040	.00032	.00005	.00042	.00034	.00002	.00010
51. Office, Computing & Accounting Machines.....	-----	-----	.00334	.00029	-----	.00059	.00093	-----	.00004	-----
52. Service Industry Machines.....	-----	.00006	.00610	.00005	-----	-----	.00006	-----	.00025	-----
53. Electric Industrial Equipment & Apparatus.....	-----	.00015	.00028	.00051	.00011	.00040	.00128	.00076	.00005	.00003
54. Household Appliances.....	-----	.00095	.00067	-----	.00006	-----	-----	.00002	.00024	-----
55. Electric Lighting & Wiring Equipment.....	.00211	.00085	.00093	.00130	.00047	.00010	.00011	.00042	.00004	.00017
56. Radio, Television & Communication Equipment.....	-----	.00042	.00171	-----	-----	.00048	-----	.00038	-----	-----
57. Electronic Components & Accessories.....	-----	.00055	.00018	-----	-----	.00010	-----	-----	-----	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00011	.00002	.00002	.00003	.00002	.00002	.00003	.00001	.00003	.00002
59. Motor Vehicles & Equipment.....	-----	.00004	.00166	-----	-----	.00013	-----	-----	.00003	-----
60. Aircraft & Parts.....	-----	.00004	.00093	-----	-----	.00118	.00009	-----	-----	-----
61. Other Transportation Equipment.....	.00015	.00001	.00056	-----	-----	.00003	-----	-----	-----	-----
62. Scientific & Controlling Instruments.....	-----	.00005	.00729	.00041	-----	.00015	.00032	.00021	.00578	.00013
63. Optical, Ophthalmic & Photographic Equipment.....	-----	-----	.00001	.00041	-----	.00389	.00053	.00299	.00005	.00004
64. Miscellaneous Manufacturing.....	.00047	.00417	.01756	.00109	.00089	.00278	.00167	.00064	.00109	.00070
65. Transportation & Warehousing.....	.03903	.02219	.01737	.03824	.03535	.01464	.03428	.03410	.02019	.03014
66. Communications: Except Radio & TV Broadcasting.....	.00229	.00528	.00414	.00297	.00234	.01257	.00454	.00300	.00222	.00422
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	.01257	-----	-----	-----	.00422
68. Electric, Gas, Water & Sanitary Services.....	.00853	.00599	.00531	.01922	.00569	.00431	.02758	.01128	.00442	.00471
69. Wholesale & Retail Trade.....	.05148	.05413	.05323	.03867	.03857	.02332	.03277	.02198	.02794	.04001
70. Finance & Insurance.....	.00712	.00565	.00560	.00652	.00723	.01015	.01027	.00827	.00886	.00826
71. Real Estate & Rental.....	.01053	.01272	.01141	.00441	.01075	.03754	.01076	.00671	.00425	.01288
72. Hotels; Personal & Repair Services exc. Auto.....	.00264	.00204	.00181	.00095	.00133	.00130	.00062	.00071	.00051	.00057
73. Business Services.....	.00603	.01824	.01090	.01849	.00544	.04756	.01456	.01526	.17138	.01661
74. Research & Development.....	-----	-----	-----	.00021	-----	-----	.00229	-----	-----	-----
75. Automobile Repair & Services.....	.00898	.00178	.00198	.00080	.00102	.00109	.00143	.00044	.00066	.00169
76. Amusements.....	.00006	.00005	.00004	.00002	.00003	.00004	.00002	.00002	.00002	.00002
77. Medical, Educational Services & Nonprofit Organizations.....	.00129	.00123	.00116	.00109	.00127	.00121	.00102	.00115	.00113	.00116
78. Federal Government Enterprises.....	.00106	.00064	.00109	.00118	.00107	.00753	.00228	.00561	.00244	.00255
79. State & Local Government Enterprises.....	.00068	.00023	.00021	.00154	.00015	.00019	.00065	.00044	.00029	.00030
80. Gross Imports of Goods & Services.....	.01109	.00014	-----	.08439	.00053	.00355	.02509	.00599	.00871	.00357
81. Business Travel, Entertainment & Gifts.....	.00015	.00860	.01030	.00566	.00698	-----	.01648	.00224	.00734	.01276
82. Office Supplies.....	.00050	.00083	.00099	.00050	.00070	.00320	.00096	.00011	.00050	.00100
A. Adjustment for Scrap and By-Products ¹	-----	-----	-----	.01053	.00784	-----	.01198	-----	-----	-----
V.A. Value Added.....	.35508	.42493	.44700	.34833	.38102	.47611	.36684	.35248	.37837	.34950
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)

[Producers' prices, 1961 dollars]

For the composition of inputs to an industry, read the column for that industry.

	Petroleum refining and related industries	Rubber and miscellaneous plastics products	Leather tanning and industrial leather products	Footwear and other leather products	Glass and glass products	Stone and clay products	Primary iron and steel manufacturing	Primary nonferrous metals manufacturing	Metal containers	Heating, plumbing and structural metal products
	31	32	33	34	35	36	37	38	39	40
1. Livestock & Livestock Products.....	-----	-----	-----	-----	-----	.00047	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	.00120	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
5. Iron & Ferroalloy Ores Mining.....	.00016	-----	-----	-----	-----	.00101	.05086	.00219	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	.00003	.00055	.00027	.07438	-----	-----
7. Coal Mining.....	.00024	.00108	.00158	.00013	.00085	.00534	.01930	.00208	.00015	.00016
8. Crude Petroleum & Natural Gas.....	.4647	-----	-----	-----	-----	-----	-----	-----	-----	-----
9. Stone and Clay Mining and Quarrying.....	.00348	.00096	-----	-----	.01188	.06684	.00291	.00044	-----	.00019
10. Chemical & Fertilizer Mineral Mining.....	.00006	.00116	.00079	-----	.00028	.00298	.00037	.00015	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00137	.00097	.00008	.00011	.00042	.00043	.00624	.00033	.00024	.00089
13. Ordnance & Accessories.....	.00004	-----	.00004	-----	-----	-----	.00003	.00008	-----	.00008
14. Food & Kindred Products.....	.00053	.00019	.00964	-----	-----	.00087	.00037	.00006	-----	-----
15. Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	*	.02246	.00005	.02219	-----	.00173	-----	.00140	-----	.00021
17. Miscellaneous Textile Goods & Floor Coverings.....	-----	.06803	.00007	.01146	.00006	.00022	.00006	.00046	-----	.00005
18. Apparel.....	.00016	.00283	.00001	.00817	.00117	-----	.00073	.00047	-----	.00088
19. Miscellaneous Fabricated Textile Products.....	.00006	.00045	.00141	.00943	.00001	.00051	.00011	.00019	-----	.00025
20. Lumber & Wood Products, Except Containers.....	.00012	.00179	-----	.00848	.01505	.00177	.00104	.00102	.00043	.00219
21. Wooden Containers.....	.00002	*	.00166	.00027	.00492	.00130	.00015	-----	.00043	.00093
22. Household Furniture.....	-----	.00008	-----	.00036	.00230	-----	.00009	-----	.00002	.00116
23. Other Furniture & Fixtures.....	-----	.00016	-----	.00001	*	*	.00001	-----	-----	.00173
24. Paper & Allied Products, Except Containers.....	.00315	.00379	.00264	.00712	.00227	.01956	.00246	.00264	.00438	.00184
25. Paperboard Containers & Boxes.....	.00181	.00774	.00128	.01134	.07589	.00931	.00077	.00066	.01328	.00398
26. Printing & Publishing.....	.00004	.00360	.00172	.00556	.00154	.00203	.00149	.00088	.00308	.00057
27. Chemicals & Selected Chemical Products.....	.02946	.05017	.06079	.00030	.03968	.00126	.00991	.00988	.00002	.00257
28. Plastics & Synthetic Materials.....	.00079	.14617	.00057	.00037	-----	.01027	.00023	.01015	.00092	.00030
29. Drugs, Cleaning & Toilet Preparations.....	.00246	.00102	.02206	.00032	.00157	.00591	.00187	.00096	.00244	.00028
30. Paints & Allied Products.....	.00032	.00020	.00002	.00001	.00005	.00097	.00080	.00072	.01739	.00283
31. Petroleum Refining & Related Industries.....	.07046	.00261	.00353	.00029	.00316	.01081	.00769	.00400	.00271	.00538
32. Rubber & Miscellaneous Plastics Products.....	.00039	.03600	.00435	.06087	.00391	.00983	.00331	.00169	.01544	.00142
33. Leather Tanning & Industrial Leather Products.....	-----	.00059	.13134	.20459	-----	.00008	-----	-----	.00038	.00013
34. Footwear & Other Leather Products.....	*	.00126	.00233	.08656	.00001	.00004	*	*	*	.00001
35. Glass & Glass Products.....	.00014	.00734	.00005	.00009	.04855	.00105	.00006	.00003	.00002	.00391
36. Stone & Clay Products.....	.00194	.00390	.00866	.00216	.02817	.12108	.01560	.00475	.00199	.00623
37. Primary Iron & Steel Manufacturing.....	.00002	.00216	-----	-----	-----	.00409	.22410	.01379	.44902	.24394
38. Primary Nonferrous Metal Manufacturing.....	.00011	.00215	.00019	.00037	.00238	.00201	.01719	.32447	.01102	.07509
39. Metal Containers.....	.00678	-----	-----	-----	-----	-----	-----	-----	.00076	.00049
40. Heating, Plumbing & Structural Metal Products.....	.00014	.00049	-----	.00012	.00031	.00064	.00286	.00036	.00427	.02238
41. Stampings, Screw Machine Products & Bolts.....	.00011	.00357	.00069	.00049	.00427	.00141	.00617	.00869	.01242	.02011
42. Other Fabricated Metal Products.....	.01026	.01196	.00140	.00707	.00405	.01130	.01700	.01031	.00393	.03372
43. Engines & Turbines.....	-----	*	-----	-----	-----	-----	.00014	-----	-----	.00259
44. Farm Machinery & Equipment.....	-----	.00002	-----	.00007	.00016	.00003	.00160	.00004	.00004	.00151
45. Construction, Mining & Oil Field Machinery.....	-----	.00001	-----	-----	.00006	.00006	.00086	.00001	-----	.00369
46. Materials Handling Machinery & Equipment.....	-----	-----	-----	.00002	-----	.00002	.00014	.00012	-----	.00079
47. Metalworking Machinery & Equipment.....	.00014	.00065	.00058	.00008	.00145	.00129	.00653	.00684	.01194	.00525
48. Special Industry Machinery & Equipment.....	-----	.00090	-----	.00001	-----	.00090	.00134	.00024	*	.00447
49. General Industrial Machinery & Equipment.....	.00006	.00100	.00025	.00011	.00149	.00036	.00334	.00335	.00736	.00219
50. Machine Shop Products.....	.00002	.00324	.00015	.00010	.00077	.00052	.00847	.00370	.00550	.00493
51. Office, Computing & Accounting Machines.....	-----	-----	-----	-----	-----	-----	.00006	-----	-----	.00056
52. Service Industry Machines.....	-----	.00003	-----	-----	.00011	.00005	.00009	.00024	-----	.00705
53. Electric Industrial Equipment & Apparatus.....	.00014	.00061	.00055	.00003	.00072	.00091	.00462	.00406	.00112	.01113
54. Household Appliances.....	-----	.00049	-----	-----	.00028	*	.00044	.00048	.00222	.00757
55. Electric Lighting & Wiring Equipment.....	.00003	.00181	.00082	.00071	.00210	.00382	.00056	.00603	.00043	.00231
56. Radio, Television & Communication Equipment.....	.00032	.00102	-----	-----	-----	.00003	.00001	.00099	-----	.00017
57. Electronic Components & Accessories.....	-----	.00047	-----	.00060	*	.00040	-----	.00031	-----	.00186
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00002	.00617	.00001	.00003	.00004	.00006	.00001	.00418	.00001	.00005
59. Motor Vehicles & Equipment.....	.00001	.00002	.00005	.00003	-----	.00018	.00204	.00171	.00002	.00317
60. Aircraft & Parts.....	-----	.00277	-----	.00007	-----	.00012	.00007	.00002	.00312	.00119
61. Other Transportation Equipment.....	-----	.00033	-----	.00002	-----	-----	.00091	.00070	-----	.00564
62. Scientific & Controlling Instruments.....	.00007	.00158	.00029	.00175	.00099	.00051	.00027	.00045	.00021	.01056
63. Optical, Ophthalmic & Photographic Equipment.....	.00002	.00035	.00007	.00095	.00013	.00009	.00008	.00005	.00006	.00016
64. Miscellaneous Manufacturing.....	.00045	.00506	.00053	.00363	.00091	.00279	.00058	.00151	.00071	.00090
65. Transportation & Warehousing.....	.05182	.02389	.02151	.01131	.02684	.06018	.05445	.02097	.02597	.01877
66. Communications; Except Radio & TV Broadcasting.....	.00136	.00335	.00266	.00280	.00308	.00342	.00356	.00272	.00104	.00421
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	.01605	.01166	.00697	.00318	.04075	.03037	.02554	.02228	.00720	.00689
69. Wholesale & Retail Trade.....	.01029	.03748	.02704	.02601	.03940	.03123	.03602	.03183	.03874	.03715
70. Finance & Insurance.....	.00696	.00677	.00618	.00746	.01072	.01061	.00818	.00722	.00676	.00885
71. Real Estate & Rental.....	.00630	.01202	.00290	.00904	.00783	.00834	.00407	.00400	.00442	.00674
72. Hotels; Personal & Repair Services exc. Auto.....	.00116	.00136	.00110	.00264	.00172	.00137	.00108	.00070	.00085	.00125
73. Business Services.....	.02196	.02829	.00437	.02899	.01727	.01534	.00955	.00826	.01039	.01291
74. Research & Development.....	.00043	-----	-----	-----	.00101	-----	.00095	.00052	-----	.00028
75. Automobile Repair & Services.....	.00114	.00042	.00062	.00037	.00080	.00347	.00037	.00060	.00043	.00227
76. Amusements.....	-----	.00003	.00003	.00006	.00004	.00003	.00003	.00002	.00002	.00003
77. Medical, Educational Services & Nonprofit Organizations.....	.00105	.00127	.00104	.00123	.00124	.00118	.00116	.00101	.00117	.00117
78. Federal Government Enterprises.....	.00199	.00100	.00500	.00233	.00291	.00095	.00088	.00050	.00079	.00115
79. State & Local Government Enterprises.....	.00048	.00037	.00041	.00010	.00052	.00152	.00088	.00035	.00012	.00029
80. Gross Imports of Goods & Services.....	.03057	.03292	.04546	.00597	.02256	.01619	.02034	.07958	.00013	.00228
81. Business Travel, Entertainment & Gifts.....	.00175	.00943	.00327	.00647	.00947	.00936	.00438	.00458	.00364	.00894
82. Office Supplies.....	.00031	.00084	.00029	.00096	.00084	.00064	.00047	.00037	.00028	.00057
A. Adjustment for Scrap and By-Products.....	.00018	-.00043	.29760	-.00020	.00732	.00212	.00130	.02134	-.00521	-.00096
B. Value Added.....	.24272	.42388	.28925	.44664	.54376	.47584	.40092	.28085	.31977	.36553
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)
[Producers' prices, 1961 dollars]

For the composition of inputs to an industry, read the column for that industry.	Staples, screw machine products and bolts	Other fabricated metal products	Engines and turbines	Farm machinery and equipment	Construction, mining and oil field machinery	Metal building machinery and equipment	Metalworking machinery and equipment	Special industry machinery and equipment	General industrial machinery and equipment	Machine shop products
	41	42	43	44	45	46	47	48	49	50
1. Livestock & Livestock Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	.00121	-----	-----	-----	-----	-----	-----
5. Iron & Ferroalloy Ores Mining.....	-----	-----	-----	-----	-----	-----	.00018	-----	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	.00020	-----	-----	-----	-----	-----	-----	-----	-----
7. Coal Mining.....	.00021	.00028	.00100	.00069	.00061	.00028	.00019	.00018	.00026	.00008
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	.00017	-----	.00015	.00012	-----	.00017	-----	.00270	.00002
10. Chemical & Fertilizer Mineral Mining.....	-----	.00004	-----	-----	-----	-----	-----	-----	-----	-----
11. New Construction.....	.00059	.00052	.00030	.00004	.00021	.00030	.00191	.00088	.00110	.00393
12. Maintenance & Repair Construction.....	.00041	.00012	-----	.00181	.00018	-----	.00013	.00041	.00012	.00002
13. Ordnance & Accessories.....	-----	.00003	-----	.00005	-----	.00009	-----	.00037	-----	-----
14. Food & Kindred Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
15. Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00008	.00082	.00009	.00005	.00008	.00143	-----	.00120	.00056	*
17. Miscellaneous Textile Goods & Floor Coverings.....	.00010	.00122	.00029	-----	-----	-----	-----	-----	-----	-----
18. Apparel.....	.00008	.00008	.00066	.00065	.00069	.00067	.00098	.00093	.00088	.00126
19. Miscellaneous Fabricated Textile Products.....	.00013	.00002	-----	-----	-----	-----	-----	-----	-----	*
20. Lumber & Wood Products, Except Containers.....	.00049	.00086	.00027	.00336	.00117	.00073	.00130	.00529	.00141	-----
21. Wooden Containers.....	.00042	.00071	-----	.00025	-----	.00001	*	.00012	.00005	-----
22. Household Furniture.....	.00025	.00109	-----	.00003	.00013	-----	.00003	.00004	.00036	-----
23. Other Furniture & Fixtures.....	.00013	.00089	-----	.00047	-----	.00044	*	.00002	.00013	*
24. Paper & Allied Products, Except Containers.....	.00034	.00301	.00111	.00055	.00087	.00062	.00001	.00191	.00270	.00009
25. Paperboard Containers & Boxes.....	.00080	.00514	.00469	.00201	.00082	.00034	.00026	.00029	.00160	-----
26. Printing & Publishing.....	.00165	.00297	.00149	.00044	.00041	.00055	.00008	.00107	.00054	.00020
27. Chemicals & Selected Chemical Products.....	.00320	.01008	.00006	.00091	.00089	-----	.00092	.00199	.00181	*
28. Plastics & Synthetic Materials.....	.00365	.00086	.00060	.00013	.00042	.00044	.00039	.00065	.00025	-----
29. Drugs, Chemical & Toilet Preparations.....	.00064	.00029	.00046	.00057	.00051	.00068	.00039	.00066	.00042	.00063
30. Paints & Allied Products.....	.00499	.00162	.00123	.00377	.00143	.00290	.00005	.00032	.00068	-----
31. Petroleum Refining & Related Industries.....	.00615	.00438	.00395	.00363	.00415	.00317	.00472	.00533	.00361	.01001
32. Rubber & Miscellaneous Plastics Products.....	.00661	.00745	.00509	.03566	.01479	.01900	.00334	.01183	.00444	.00177
33. Leather Tanning & Industrial Leather Products.....	.00011	.00009	.00015	.00101	.00013	.00009	.00007	.00117	.00024	.00032
34. Footwear & Other Leather Products.....	.00026	.00008	.00001	.00001	.00001	.00001	.00007	.00001	.00001	.00083
35. Glass & Glass Products.....	.00106	.00025	.00052	.00011	.00028	.00029	.00013	.00005	.00006	.00004
36. Stone & Clay Products.....	.00756	.00694	.00626	.00513	.00541	.00364	.00690	.00411	.00869	.01711
37. Primary Iron & Steel Manufacturing.....	.19260	.18574	.10292	.13903	.15021	.10467	.07950	.08529	.10507	.07906
38. Primary Nonferrous Metal Manufacturing.....	.06409	.06409	.03463	.00752	.00721	.01180	.07448	.04454	.02864	.08042
39. Metal Containers.....	.00439	.00092	-----	-----	.00003	-----	.00024	.00001	*	-----
40. Heating, Plumbing & Structural Metal Products.....	.00747	.00778	.00153	.00199	.01355	.01152	.00330	.01012	.01836	.00180
41. Staples, Screw Machine Products & Bolts.....	.03752	.01781	.02141	.02755	.00943	.01637	.02521	.01135	.01037	.00489
42. Other Fabricated Metal Products.....	.02582	.04116	.00265	.00605	.01176	.02173	.02060	.01562	.01914	.01906
43. Engines & Turbines.....	.00125	.00062	.00780	.03889	.02119	.00948	.00099	.00028	.00822	.00271
44. Farm Machinery & Equipment.....	.00105	.00097	.01698	.03964	.01417	.00440	.00134	.00258	.00206	.00055
45. Construction, Mining & Oil Field Machinery.....	.00029	.00259	.03709	.01493	.05320	.05212	.00167	.00702	.00761	.00306
46. Materials Handling Machinery & Equipment.....	.00026	.00096	.00136	.00044	.00569	.03889	.00219	.00445	.00734	.00033
47. Metalworking Machinery & Equipment.....	.01178	.02559	.01707	.01621	.01704	.01580	.05539	.02201	.01785	.01774
48. Special Industry Machinery & Equipment.....	.00055	.00224	.00161	.00232	.00222	.00475	.00873	.05877	.00742	.00504
49. General Industrial Machinery & Equipment.....	.00072	.00764	.03730	.05617	.06070	.06635	.03277	.05651	.07810	.00827
50. Machine Shop Products.....	.00421	.00308	.03445	.01588	.00501	.01735	.00563	.00432	.00646	.10476
51. Office, Computing & Accounting Machines.....	.00058	.00025	-----	-----	.00058	.00160	.00003	.00190	.00005	.00051
52. Service Industry Machines.....	.00043	.00104	.00012	.00033	.00052	.00147	.00168	.00436	.00836	.00043
53. Electric Industrial Equipment & Apparatus.....	.00410	.00404	.01947	.00569	.01101	.04775	.02585	.03764	.05100	.00528
54. Household Appliances.....	.00221	.02213	.00006	.00305	.00019	-----	.00168	.00111	*	.00008
55. Electric Lighting & Wiring Equipment.....	.00380	.00216	.00047	.00073	.00120	.00289	.00054	.00046	.00110	.00081
56. Radio, Television & Communication Equipment.....	.00035	.00044	.00015	.00012	.00090	.00019	.00005	.00990	.00233	.00073
57. Electronic Components & Accessories.....	.00088	.00102	-----	.00030	.00030	.00045	.00008	.00372	.00038	.00012
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00026	.00035	.01899	.00735	.00157	.00239	.00008	.00039	.00104	.00155
59. Motor Vehicles & Equipment.....	.02355	.00422	.02834	.01598	.01402	.00734	.04142	.00205	.00605	.00308
60. Aircraft & Parts.....	.00145	.00068	.01210	.00174	.00065	.00169	.00474	.00326	.01608	.00266
61. Other Transportation Equipment.....	.00023	.00063	.01075	.00165	.00388	.00326	.00021	.00243	.00489	.00238
62. Scientific & Controlling Instruments.....	.00047	.00021	.00006	.00006	.00007	.00007	.00013	.00207	.00033	.00017
63. Optical, Ophthalmic & Photographic Equipment.....	.00047	.00021	.00006	.00006	.00007	.00007	.00013	.00207	.00033	.00017
64. Miscellaneous Manufacturing.....	.00071	.00282	.00134	.00109	.00057	.03123	.00266	.00090	.00030	.00033
65. Transportation & Warehousing.....	.01606	.01484	.01300	.01535	.01394	.01211	.00779	.01172	.01357	.01055
66. Communications: Except Radio & TV Broadcasting.....	.00256	.00275	.00260	.00237	.00313	.00337	.00785	.00942	.00907	.00698
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	.00936	.00763	.00458	.00535	.00616	.00434	.00567	.00540	.00625	.00435
69. Wholesale & Retail Trade.....	.02942	.03607	.02753	.03718	.03377	.04188	.02779	.03928	.04533	.03270
70. Finance & Insurance.....	.00644	.00732	.00652	.00706	.00728	.00624	.00794	.00767	.00664	.00907
71. Real Estate & Rental.....	.00869	.00575	.00480	.00525	.00556	.00947	.01752	.00998	.00741	.01584
72. Hotels, Personal & Repair Services exc. Auto.....	.00140	.00140	.00095	.00096	.00099	.00100	.00145	.00138	.00121	.00187
73. Business Services.....	.00587	.01589	.01269	.02724	.01460	.01593	.01080	.01271	.01276	.01149
74. Research & Development.....	-----	-----	.00597	-----	-----	-----	-----	-----	-----	-----
75. Automobile Repair & Services.....	.00085	.00105	.00031	.00102	.00088	.00069	.00070	.00151	.00077	.00133
76. Amusements.....	.00004	.00004	.00003	.00003	.00003	.00003	.00004	.00004	.00004	.00005
77. Medical, Educational Services & Nonprofit Organizations.....	.00110	.00106	.00108	.00106	.00109	.00097	.00101	.00108	.00104	.00120
78. Federal Government Enterprises.....	.00111	.00108	.00104	.00197	.00083	.00132	.00082	.00101	.00111	.00136
79. State & Local Government Enterprises.....	.00013	.00030	.00018	.00037	.00018	.00010	.00023	.00023	.00020	.00023
80. Gross Imports of Goods & Services.....	.00898	.01675	.00870	.04589	.00176	.01261	.01593	.02381	.00568	.01478
81. Business Travel, Entertainment & Gifts.....	.00094	.01081	.01011	.00810	.01028	.01259	.01121	.01336	.01319	.01112
82. Office Supplies.....	.00076	.00083	.00076	.00080	.00077	.00095	.00084	.01001	.00094	.00084
A. Adjustment for Scrap and By-Products ¹	-.01517	-.00249	.00043	-.00199	-.00337	.00009	-.00242	-.01045	-.00293	-.02574
V.A. Value Added.....	4.4838	3.245	3.9072	3.7271	4.6113	3.6296	5.2655	4.3711	4.2443	5.1456
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)

[Producers' prices, 1961 dollars]

For the composition of inputs to an industry, read the column for that industry.

	Office, computing and accounting machines	Service industry machines	Electric industrial equipment and apparatus	Household appliances	Electric lighting and wiring equipment	Radio, television and communication equipment	Electronic components and accessories	Miscellaneous electrical machinery, equipment and supplies	Motor vehicles and equipment	Aircraft and parts
	51	52	53	54	55	56	57	58	59	60
1. Livestock & Livestock Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
5. Iron & Ferrous Alloy Ores Mining.....	-----	-----	.00077	-----	-----	-----	-----	.00118	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----	-----	-----	.00144	-----	-----	.00079	-----	-----
7. Coal Mining.....	.00025	.00027	.00025	.00047	.00018	.00013	.00011	.00033	.00048	.00011
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----	-----	-----	-----	-----	-----	.00017	.00001	-----
10. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00067	.00121	.00130	.00085	.00005	.00134	.00072	.00006	.00295	.00171
13. Ordnance & Accessories.....	.00053	-----	.00076	-----	-----	.01855	.00571	-----	.00032	.03068
14. Food & Kindred Products.....	-----	.00010	-----	.00001	-----	-----	-----	-----	*	-----
15. Tobacco Manufactures.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00006	.00012	.00027	.00274	-----	.00022	-----	.00029	.00210	.00014
17. Miscellaneous Textile Goods & Floor Coverings.....	*	-----	.00029	.00008	.00001	-----	-----	-----	.00372	.00049
18. Apparel.....	.00079	.00071	.00089	.00074	.00089	.00073	.00128	.00087	.00043	.00086
19. Miscellaneous Fabricated Textile Products.....	-----	.00006	-----	-----	.00018	.00001	-----	-----	.00066	-----
20. Lumber & Wood Products, Except Containers.....	.00052	.00347	.00129	.00172	.00118	.00182	.00026	.00002	.00056	.00169
21. Wooden Containers.....	.00030	.00490	.00003	.00562	-----	-----	-----	.00003	-----	-----
22. Household Furniture.....	-----	.00126	-----	.00014	.00001	.01308	.00574	-----	.00006	-----
23. Other Furniture & Fixtures.....	.00014	.00075	*	.00023	*	.00001	.00001	-----	.00016	.00147
24. Paper & Allied Products, Except Containers.....	.00640	.00414	.00806	.00163	.00263	.00441	.00837	.00123	.00359	.00039
25. Paperboard Containers & Boxes.....	.00167	.00862	.00395	.01034	.01652	.00519	.00549	.00677	.00105	.00074
26. Printing & Publishing.....	.00339	.00027	.00123	.00071	.00031	.00149	.00056	.00021	.00054	.00083
27. Chemicals & Selected Chemical Products.....	.00035	.00684	.00388	.00549	.00520	.00104	.01171	.02113	.00180	.00126
28. Plastics & Synthetic Materials.....	.00104	.00098	.00663	.00265	.01654	.00661	.00720	.00510	.00108	.00064
29. Drugs, Cleaning & Toilet Preparations.....	.00021	.00063	.00012	.00020	.00016	.00035	.00006	.00007	.00083	.00042
30. Paints & Allied Products.....	.00094	.00539	.00305	.00649	.00468	.00046	.00065	.00001	.00399	.00085
31. Petroleum Refining & Related Industries.....	.00144	.00307	.00318	.00137	.00168	.00125	.00160	.00133	.00204	.00241
32. Rubber & Miscellaneous Plastics Products.....	.01083	.01279	.00797	.03859	.01601	.01048	.00700	.04743	.02998	.00688
33. Leather Tanning & Industrial Leather Products.....	.00010	.00015	.00011	.00027	.00016	.00018	.00005	.00007	.00029	-----
34. Footwear & Other Leather Products.....	.00002	.00001	.00002	.00144	.00001	.00001	.00002	.00001	*	.00001
35. Glass & Glass Products.....	.00024	.00331	.00091	.00182	.02899	.00488	.03262	.00067	.01041	.00013
36. Stone & Clay Products.....	.00244	.00594	.00806	.00799	.00641	.00320	.00661	.00923	.00307	.00383
37. Primary Iron & Steel Manufacturing.....	.02031	.07231	.05945	.08346	.06353	.00941	.01994	.02835	.08800	.03235
38. Primary Nonferrous Metal Manufacturing.....	.01929	.05641	.07404	.04817	.05079	.02025	.04601	.10067	.01165	.03005
39. Metal Containers.....	-----	.00001	-----	*	.00001	-----	-----	-----	*	-----
40. Chemical, Plumbing & Structural Metal Products.....	.00002	.02592	.00280	.01713	.00219	.00062	.00039	.00002	.00119	.00066
41. Stampings, Screw Machine Products & Bolts.....	.00978	.03393	.01419	.05404	.02428	.01727	.02141	.02220	.02893	.01883
42. Other Fabricated Metal Products.....	.00553	.02771	.00850	.03508	.01675	.01207	.01382	.00439	.03511	.01033
43. Engines & Turbines.....	-----	.00151	.01499	-----	-----	-----	-----	.00093	.00361	.00147
44. Farm Machinery & Equipment.....	.00001	.00050	.00018	.00001	.00029	-----	-----	.00063	.00125	.00016
45. Construction, Mining & Oil Field Machinery.....	.00001	.00051	.00106	.00025	.00030	.00016	.00052	.00139	.00051	.00017
46. Materials Handling Machinery & Equipment.....	.00001	.00104	.00036	-----	.00001	.00001	-----	-----	.00019	.00039
47. Metalworking Machinery & Equipment.....	.00901	.00310	.01199	.00844	.00530	.00463	.00577	.01379	.01101	.01998
48. Special Industry Machinery & Equipment.....	.00472	.00319	.00108	.00002	.00001	.00032	.00026	.00002	.00030	.00051
49. General Industrial Machinery & Equipment.....	.00663	.01727	.00977	.01236	.00138	.00113	.00093	.01779	.00586	.01158
50. Machine Shop Products.....	.00256	.00107	.00202	.00122	.00175	.00108	.00118	.00854	.00737	.01144
51. Office, Computing & Accounting Machines.....	.09542	.00012	.00092	.00001	-----	.00141	.00611	.00086	-----	.00074
52. Service Industry Machines.....	.00001	.05174	.00029	.03192	.00064	.00073	.00002	.00002	.00147	.00049
53. Electric Industrial Equipment & Apparatus.....	.02258	.09284	.07504	.04822	.03133	.01651	.02718	.02347	.00233	.00339
54. Household Appliances.....	-----	.07192	.00056	.01058	.00029	.00032	.00052	.00257	*	.00248
55. Electric Lighting & Wiring Equipment.....	.00401	.00701	.01680	.00860	.04080	.01196	.00760	.03867	.00454	.00134
56. Radio, Television & Communication Equipment.....	.00929	.00362	.01014	.00023	.00255	.07819	.03425	.00532	.00499	.03088
57. Electronic Components & Accessories.....	.04211	.00007	.02889	.00001	.00490	.18610	.06216	.01697	.00082	.00640
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00027	.00002	.00198	.00023	.03247	.00032	.00052	.04327	.01643	.00382
59. Motor Vehicles & Equipment.....	.00003	.01407	.00132	.00171	.00001	.00011	-----	.02856	.30419	.00626
60. Aircraft & Parts.....	.00484	.00729	.00095	.00014	.00001	.00822	-----	.00070	.00047	.17280
61. Other Transportation Equipment.....	-----	.00650	.00403	.00157	.00001	.00016	-----	.00002	.00105	.00023
62. Scientific & Controlling Instruments.....	.00284	.01440	.01315	.03291	.00290	.00557	.00461	.00437	.00489	.01453
63. Optical, Ophthalmic & Photographic Equipment.....	.00004	.00007	.00079	.00190	.00008	.00244	.00031	.00046	.00004	.00200
64. Miscellaneous Manufacturing.....	.00150	.00182	.00060	.00121	.00533	.00189	.00141	.00056	.00088	.00201
65. Transportation & Warehousing.....	.00470	.01618	.01261	.01753	.01310	.01273	.01096	.01314	.01972	.00920
66. Communications, Except Radio & TV Broadcasting.....	.00420	.00372	.00431	.00461	.00257	.00348	.00291	.00326	.00211	.00456
67. Radio & TV Broadcasting.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	.00337	.00545	.00727	.00696	.00510	.00295	.00797	.00607	.00497	.00570
69. Wholesale & Retail Trade.....	.00419	.05718	.03258	.04567	.05998	.03777	.05527	.03513	.03088	.01907
70. Finance & Insurance.....	.00578	.00925	.00505	.00384	.00453	.00394	.00520	.00441	.00425	.00334
71. Real Estate & Rental.....	.00001	.01443	.00649	.00609	.00951	.00654	.02152	.00759	.00293	.00606
72. Hotels; Personal & Repair Services Exc. Auto.....	.00113	.00102	.00128	.00106	.00126	.00104	.00189	.00122	.00064	-----
73. Business Services.....	.02784	.01127	.01262	.10296	.01388	.02572	.01126	.02310	.02763	.00382
74. Research & Development.....	-----	-----	-----	-----	-----	.00037	.00083	-----	.00057	.00104
75. Automobile Repair & Services.....	.00028	.00125	.00054	.00022	.00032	.00024	.00002	.00049	.00038	.00014
76. Amusements.....	.00003	.00003	.00004	.00003	.00003	.00003	.00005	.00003	.00002	-----
77. Medical, Educational Services & Nonprofit Organizations.....	.00097	.00112	.00118	.00125	.00111	.00117	.00119	.00107	.00115	.00104
78. Federal Government Enterprises.....	.00167	.00125	.00283	.00253	.00198	.00270	.00368	.00248	.00188	.00105
79. State & Local Government Enterprises.....	.00012	.00021	.00023	.00026	.00022	.00013	.00023	.00028	.00023	.00020
80. Gross Imports of Goods & Services.....	.02441	.00411	.01131	.00013	.00654	.01788	.00739	.01477	.01273	.00845
81. Business Travel, Entertainment & Gifts.....	.02306	.01109	.02176	.01058	.01216	.01858	.02054	.01340	.00426	.00417
82. Office Supplies.....	.00146	.00083	.00066	.00066	.00076	.00116	.00128	.00084	.00041	.00083
A. Adjustment for Scrap and By-Products.....	-.00060	-.00430	-.00137	.00013	.00058	-.01644	-----	-.00418	-.00552	-.00157
V.A. Value Added.....	.54653	.29077	.44901	.30665	.47581	.2373	.49710	.41532	.27814	.48806
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34. — UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)
(Producers' prices, 1961 dollars)

	For the composition of inputs to an industry, read the column for that industry.									
	Other transportation equipment	Scientific and controlling instruments	Optical, photographic and cinematographic equipment	Miscellaneous manufacturing	Transportation and warehousing	Communications; except radio and TV broadcasting	Radio and TV broadcasting	Electric, gas, water and sanitary services	Wholesale and retail trade	Finance and insurance
	61	62	63	64	65	66	67	68	69	70
1. Livestock & Livestock Products.....	-----	-----	-----	-----	0.0004	-----	-----	-----	-----	-----
2. Other Agricultural Products.....	-----	0.00107	-----	0.00127	0.00189	-----	-----	-----	-----	-----
3. Forestry & Fishery Products.....	-----	-----	-----	0.00045	0.0004	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----	-----	-----	-----	-----	-----	-----	0.00137	-----
5. Iron & Ferroalloy Ores Mining.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	0.00032	-----	-----	-----	-----	-----	0.00013	-----	-----
7. Coal Mining.....	0.00053	0.00007	0.00129	0.00022	0.00073	-----	-----	0.02413	0.00003	0.00019
8. Crude Petroleum & Natural Gas.....	-----	-----	-----	-----	-----	-----	-----	0.06673	-----	-----
9. Stone and Clay Mining and Quarrying.....	0.00007	0.00003	-----	0.00007	0.00004	-----	-----	0.00001	0.00004	-----
10. Chemical & Fertilizer Mineral Mining.....	-----	-----	-----	0.00001	0.00002	-----	-----	-----	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	0.00034	0.00044	0.00030	0.00267	0.03468	0.02967	0.00454	0.02464	0.00758	0.00381
13. Ordnance & Accessories.....	-----	0.02517	0.00070	0.00004	-----	-----	-----	-----	0.00007	-----
14. Food & Kindred Products.....	-----	0.00278	-----	0.00143	0.00289	-----	-----	0.00007	0.00528	-----
15. Tobacco Manufacturers.....	-----	-----	-----	0.00010	-----	-----	-----	0.00001	0.00003	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	0.00054	0.00740	0.00048	0.01689	0.00014	0.00007	-----	0.00007	0.00004	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	0.00074	0.00198	0.00030	0.00593	0.00051	0.00043	0.00105	-----	0.00026	0.00072
18. Apparel.....	0.00101	0.00232	0.00076	0.00138	0.00012	-----	-----	-----	0.00052	0.00001
19. Miscellaneous Fabricated Textile Products.....	0.00042	0.00029	-----	0.00096	0.00043	0.00056	0.00152	-----	0.00041	0.00107
20. Lumber & Wood Products, Except Containers.....	0.00343	0.00063	0.00006	0.01748	0.00026	0.00002	-----	0.00008	0.00054	-----
21. Wooden Containers.....	-----	0.00025	-----	0.00030	0.00046	-----	-----	-----	0.00085	-----
22. Household Furniture.....	0.00710	0.00094	-----	0.00024	-----	-----	-----	-----	0.00012	-----
23. Other Furniture & Fixtures.....	0.00350	0.00349	-----	0.00080	-----	-----	-----	-----	0.00013	-----
24. Paper & Allied Products, Except Containers.....	0.00160	0.00466	0.03010	0.02017	0.00096	-----	0.00486	0.00082	0.00439	0.00334
25. Paperboard Containers & Boxes.....	0.00032	0.00737	0.06617	0.03605	0.00024	-----	0.00116	0.00004	0.00355	0.00080
26. Printing & Publishing.....	0.00050	0.00094	0.00024	0.00511	0.00223	0.01189	0.00589	0.00025	0.00248	0.01334
27. Chemicals & Selected Chemical Products.....	0.00225	0.00285	0.05712	0.00763	0.00104	0.00003	-----	0.00065	0.00109	-----
28. Plastics & Synthetic Materials.....	0.00664	0.00216	0.00061	0.02051	-----	-----	-----	0.00006	0.00004	-----
29. Drugs, Chemical & Toilet Preparations.....	0.00061	0.00189	0.00007	0.00213	0.00035	0.00010	0.00003	0.00002	0.00129	0.00038
30. Paints & Allied Products.....	0.00602	0.00051	0.00019	0.00728	0.00119	-----	-----	-----	0.00023	-----
31. Petroleum Refining & Related Industries.....	0.00426	0.00125	0.00242	0.00289	0.04333	0.00177	0.00123	0.01146	0.00734	0.00311
32. Rubber & Miscellaneous Plastics Products.....	0.00896	0.01160	0.00716	0.03274	0.00751	0.00068	0.00057	0.00039	0.00246	0.00177
33. Leather Tanning & Industrial Leather Products.....	0.00049	0.00074	0.00006	0.00633	0.00010	-----	-----	-----	-----	-----
34. Footwear & Other Leather Products.....	0.00001	0.00088	0.00047	0.00583	0.00001	0.00003	0.00003	0.00001	0.00018	0.00003
35. Glass & Glass Products.....	0.00492	0.00321	0.01110	0.00513	0.00016	-----	-----	-----	0.00113	-----
36. Stone & Clay Products.....	0.00795	0.00339	0.01508	0.00207	0.00012	-----	-----	0.00114	0.00125	-----
37. Primary Iron & Steel Manufacturing.....	0.11637	0.01835	0.00550	0.02610	0.00110	-----	-----	0.00110	0.00008	-----
38. Primary Nonferrous Metal Manufacturing.....	0.01864	0.04006	0.02668	0.04685	0.00149	0.00254	-----	0.00033	0.00018	-----
39. Metal Containers.....	-----	0.00227	-----	-----	0.00002	-----	-----	0.00003	0.00007	-----
40. Heating, Plumbing & Structural Metal Products.....	0.04397	0.00120	-----	0.00032	0.00002	-----	-----	-----	0.00092	-----
41. Stampings, Screw Machine Products & Bolts.....	0.00451	0.01570	0.00519	0.01165	0.00042	-----	-----	-----	0.00043	-----
42. Other Fabricated Metal Products.....	0.00254	0.01529	0.00921	0.01640	0.00118	0.00032	-----	0.00728	0.00063	-----
43. Engines & Turbines.....	0.02491	0.00001	-----	0.00001	0.00204	-----	-----	0.00010	0.00010	-----
44. Farm Machinery & Equipment.....	0.00544	0.00032	-----	0.00027	-----	-----	-----	0.00001	0.00016	-----
45. Construction, Mining & Oil Field Machinery.....	0.00486	0.00059	0.00020	0.00001	-----	-----	-----	0.00001	0.00027	-----
46. Materials Handling Machinery & Equipment.....	0.00438	-----	-----	0.00001	0.00044	-----	-----	-----	0.00013	-----
47. Metalworking Machinery & Equipment.....	0.00508	0.01150	0.00394	0.00069	0.00066	0.00001	-----	0.00010	0.00016	-----
48. Special Industry Machinery & Equipment.....	0.00034	0.00163	0.00101	0.00040	-----	-----	-----	-----	0.00032	-----
49. General Industrial Machinery & Equipment.....	0.01646	0.00574	-----	0.00096	0.00045	-----	-----	-----	0.00030	-----
50. Machine Shop Products.....	0.00399	0.00775	0.00030	0.00243	0.00023	-----	-----	-----	0.00026	-----
51. Office, Computing & Accounting Machines.....	-----	0.01269	0.00075	0.00311	0.00008	-----	-----	0.00040	0.00054	0.00017
52. Service Industry Machines.....	0.00235	0.00154	0.00031	0.00007	-----	-----	-----	-----	0.00036	-----
53. Electric Industrial Equipment & Apparatus.....	0.00393	0.03222	0.01194	0.00544	0.00097	0.00005	-----	0.00052	0.00025	-----
54. Household Appliances.....	0.00449	0.00080	-----	0.00175	-----	-----	-----	-----	0.00024	-----
55. Electric Lighting & Wiring Equipment.....	0.00354	0.00322	0.00389	0.00294	0.00021	-----	-----	0.00012	0.00019	-----
56. Radio, Television & Communication Equipment.....	0.00172	0.01074	0.00332	0.00257	0.00087	0.01368	0.02436	0.00021	0.00049	-----
57. Electronic Components & Accessories.....	0.00004	0.02936	0.00011	0.00190	0.00074	0.00067	-----	-----	0.00012	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	0.00129	0.00087	0.00278	0.00014	0.00229	0.00051	-----	0.00003	0.00055	0.00007
59. Motor Vehicles & Equipment.....	0.01346	0.01368	-----	0.00077	0.00258	-----	-----	0.00006	0.00220	-----
60. Aircraft & Parts.....	0.00471	0.01500	0.00005	0.00066	0.00423	-----	-----	-----	0.00062	-----
61. Other Transportation Equipment.....	0.07605	0.00134	0.00038	0.00158	0.00992	0.00058	-----	0.00006	0.00011	0.00036
62. Scientific & Controlling Instruments.....	0.00152	0.07324	0.01106	0.00147	0.00086	0.00001	-----	0.00049	0.00049	-----
63. Optical, Cinematographic & Photographic Equipment.....	0.00010	0.00862	0.00002	0.00001	-----	-----	-----	-----	0.00041	-----
64. Miscellaneous Manufacturing.....	0.00267	0.00840	0.00141	0.06055	0.00154	0.00098	0.00547	0.00033	0.00119	0.00080
65. Transportation & Warehousing.....	0.01909	0.01023	0.01562	0.01619	0.06293	0.00178	0.00154	0.01769	0.00406	0.00796
66. Communications; Except Radio & TV Broadcasting.....	0.00276	0.00432	0.00291	0.00935	0.00808	0.00900	0.03727	0.00224	0.01060	0.01043
67. Radio & TV Broadcasting.....	-----	0.00048	-----	0.00058	0.00008	-----	0.00268	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	0.00657	0.00384	0.00353	0.00519	0.00507	0.00676	0.00451	1.88558	0.02165	0.00484
69. Wholesale & Retail Trade.....	0.04641	0.02447	0.04088	0.06483	0.02934	0.0531	0.01110	0.01131	0.01649	0.00850
70. Finance & Insurance.....	0.00555	0.00543	0.00604	0.00907	0.02207	0.00603	0.00808	0.00560	0.01731	1.9517
71. Real Estate & Rental.....	0.00471	0.01010	0.01285	0.01509	0.03168	0.01722	0.04932	0.00278	0.05503	0.07302
72. Hotels; Personal & Repair Services etc. Auto.....	0.00144	0.00124	0.00113	0.00169	-----	-----	-----	-----	0.00226	-----
73. Business Services.....	0.00035	0.01555	0.05888	0.02451	0.01602	0.01912	0.04091	0.01168	0.05387	0.03778
74. Research & Development.....	-----	-----	0.00131	-----	-----	-----	-----	-----	-----	-----
75. Automobile Repair & Services.....	0.00096	0.00026	0.00057	0.00151	0.02569	0.00173	0.00108	0.00125	0.00910	0.00298
76. Amusements.....	0.00004	0.00004	0.00003	0.00004	0.00078	0.00033	0.19677	-----	0.00105	0.00018
77. Medical, Educational Services & Nonprofit Organizations.....	0.00114	0.00106	0.00109	0.00116	0.00105	0.00105	0.00102	0.00088	0.00112	0.00335
78. Federal Government Enterprises.....	0.00063	0.00120	0.00220	0.00192	0.00177	0.00455	0.00061	0.01667	0.00983	0.01213
79. State & Local Government Enterprises.....	0.00028	0.00017	0.00012	0.00029	0.02446	0.00051	0.00011	1.2830	0.00393	0.00268
80. Gross Imports of Goods & Services.....	0.01670	0.01677	0.04744	0.06564	0.03977	0.00569	-----	0.00211	0.00023	0.00362
81. Business Travel, Entertainment & Gifts.....	0.01011	0.02196	0.00964	0.01236	0.00429	0.00485	0.01836	0.00285	0.01656	0.01238
82. Office Supplies.....	0.00040	0.00144	0.00071	0.00115	0.00134	0.00409	0.00110	0.00082	0.00235	0.00485
A. Adjustment for Scrap and By-Products.....	0.00062	-0.01303	-0.00033	-0.00427	-0.00059	-----	-----	0.00142	0.00049	-----
V. Value Added.....	0.00254	0.6157	0.2163	0.3848	0.5961	0.64767	0.57485	0.46446	0.71883	0.58458
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)

(Producers' prices, 1961 dollars)

For the composition of inputs to an industry, read the column for that industry.

	Real estate and rental	Hotels, personal and repair services except auto	Business services	Research and development	Automobile repair and services	Amusements	Medical, educational services and non-profit organizations	Federal Government enterprises	State and local government enterprises	Gross imports of goods and services
	71	72	73	74	75	76	77	78	79	80
1. Livestock & Livestock Products.....	.01315	-----	-----	-----	-----	.00149	.00016	.00051	-----	-----
2. Other Agricultural Products.....	.01855	-----	-----	-----	-----	-----	.00019	.21700	-----	-----
3. Forestry & Fishery Products.....	.00021	-----	-----	-----	-----	-----	-----	-----	-----	-----
4. Agricultural, Forestry & Fishery Services.....	.00029	-----	-----	-----	-----	.00050	-----	-----	.00012	-----
5. Iron & Ferroalloy Ores Mining.....	.00006	-----	-----	-----	-----	-----	-----	.00048	-----	-----
6. Nonferrous Metal Ores Mining.....	.00007	-----	-----	-----	-----	-----	-----	-----	-----	-----
7. Coal Mining.....	.00015	-----	.00109	-----	.00125	-----	.00001	.00932	.01383	-----
8. Crude Petroleum & Natural Gas.....	.00264	-----	-----	.00008	-----	-----	-----	-----	.00457	-----
9. Stone and Clay Mining and Quarrying.....	.00017	-----	-----	-----	-----	-----	-----	.00012	-----	-----
10. Chemical & Fertilizer Mineral Mining.....	.00006	-----	-----	-----	-----	-----	-----	-----	-----	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.08768	.00261	.00081	-----	.01241	.01943	.02645	.00393	.23550	-----
13. Ordnance & Accessories.....	.00001	-----	-----	-----	-----	-----	-----	-----	-----	-----
14. Food & Kindred Products.....	.00113	.00110	-----	.21973	-----	-----	-----	-----	-----	-----
15. Tobacco Manufactures.....	.00006	-----	-----	.00071	-----	-----	.00690	.01686	.00010	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00032	.00940	-----	.00018	-----	-----	.00010	-----	-----	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	.00011	.00179	.00002	.00047	.00184	.00060	.00117	-----	.00054	-----
18. Apparel.....	.00034	.00720	.00016	.00024	.00013	-----	.00146	-----	.00032	-----
19. Miscellaneous Fabricated Textile Products.....	.00002	.01042	.00078	.00040	.00200	.00089	.00143	.00059	-----	-----
20. Lumber & Wood Products, Except Containers.....	.00029	.00041	-----	.00040	-----	.00014	-----	-----	.00001	-----
21. Wooden Containers.....	.00002	-----	-----	-----	-----	-----	-----	-----	-----	-----
22. Household Furniture.....	.00005	.00092	-----	-----	-----	-----	-----	-----	-----	-----
23. Other Furniture & Fixtures.....	.00002	.00022	-----	-----	-----	-----	-----	-----	-----	-----
24. Paper & Allied Products, Except Containers.....	.00017	.01089	.00253	.00106	.00039	.00055	.00340	.00742	.00037	-----
25. Paperboard Containers & Boxes.....	.00015	.00145	.00031	.00025	.00011	.00013	.00081	.00185	-----	-----
26. Printing & Publishing.....	.00115	.00052	.20952	.00008	.00124	.00326	.01335	.01115	.00241	-----
27. Chemicals & Selected Chemical Products.....	.00117	.00780	.00054	.01428	.00001	-----	.00019	-----	.00475	-----
28. Plastics & Synthetic Materials.....	.00050	-----	-----	.00143	-----	-----	-----	-----	.00001	-----
29. Drugs, Cleaning & Toilet Preparations.....	.00081	.01441	.00110	.00297	.00116	.00016	.02412	-----	.00058	-----
30. Paints & Allied Products.....	.00016	.00001	-----	.00029	.00757	-----	-----	-----	.00002	-----
31. Petroleum Refining & Related Industries.....	.00601	.01117	.00411	.00308	.00326	.00062	.00283	.00178	.00792	-----
32. Rubber & Miscellaneous Plastics Products.....	.00074	.00576	.00252	.00498	.03401	.00029	.00268	.00032	.00108	-----
33. Leather Tanning & Industrial Leather Products.....	.00001	-----	-----	-----	-----	-----	-----	-----	-----	-----
34. Footwear & Other Leather Products.....	.00004	.00056	.00002	-----	.00001	.00166	.00011	.00023	-----	-----
35. Glass & Glass Products.....	.00013	.00026	-----	.00016	.01153	-----	.00027	-----	-----	-----
36. Stone & Clay Products.....	.00035	.00418	.00001	-----	.00521	-----	*	.00363	.00013	-----
37. Primary Iron & Steel Manufacturing.....	.00039	-----	-----	.00089	-----	-----	-----	-----	.00045	-----
38. Primary Nonferrous Metal Manufacturing.....	.00019	.00052	.00063	.00231	-----	-----	-----	-----	-----	-----
39. Metal Containers.....	.00005	-----	-----	.00016	-----	-----	-----	-----	-----	-----
40. Heating, Plumbing & Structural Metal Products.....	.00019	-----	-----	.00212	-----	-----	-----	-----	-----	-----
41. Stampings, Screw Machine Products & Bolts.....	.00011	-----	-----	.00046	-----	-----	.00076	-----	-----	-----
42. Other Fabricated Metal Products.....	.00016	.00217	.00003	.00281	.01356	-----	.00002	.00084	.00416	-----
43. Engines & Turbines.....	.00009	-----	.00340	.00752	-----	-----	-----	-----	-----	-----
44. Farm Machinery & Equipment.....	.00009	-----	.00545	.00155	-----	-----	-----	-----	-----	-----
45. Construction, Mining & Oil Field Machinery.....	.00018	-----	.00063	.00054	-----	-----	-----	-----	-----	-----
46. Materials Handling Machinery & Equipment.....	.00006	-----	-----	.00050	-----	-----	-----	-----	-----	-----
47. Metalworking Machinery & Equipment.....	.00059	-----	.00068	.00053	.00011	-----	-----	-----	-----	-----
48. Special Industry Machinery & Equipment.....	.00018	.00005	-----	.00043	-----	-----	-----	-----	-----	-----
49. General Industrial Machinery & Equipment.....	.00016	-----	-----	.00048	-----	-----	-----	-----	-----	-----
50. Machine Shop Products.....	.00015	-----	.00002	.00046	.01447	-----	.00001	.00025	.00023	-----
51. Office, Computing & Accounting Machines.....	.00012	-----	.02248	.00188	-----	-----	.00013	-----	-----	-----
52. Service Industry Machines.....	.00022	.00301	.00371	.00158	-----	-----	-----	-----	-----	-----
53. Electric Industrial Equipment & Apparatus.....	.00016	.00052	*	.02942	.00073	-----	-----	-----	-----	-----
54. Household Appliances.....	.00023	.00835	-----	.02591	-----	-----	-----	-----	-----	-----
55. Electric Lighting & Wiring Equipment.....	.00005	.00070	*	.01266	.00400	-----	*	.00006	.00006	-----
56. Radio, Television & Communication Equipment.....	.00023	.00087	-----	.06820	-----	-----	.00050	-----	-----	-----
57. Electronic Components & Accessories.....	.00032	.01900	-----	.02514	-----	-----	-----	-----	-----	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00006	.00031	.00020	.00403	.01503	-----	.00051	.00016	.00020	-----
59. Motor Vehicles & Equipment.....	.00046	-----	.00019	.03267	.13719	-----	.00007	.00274	.00245	-----
60. Aircraft & Parts.....	.00026	-----	-----	.26490	-----	-----	-----	-----	-----	-----
61. Other Transportation Equipment.....	.00017	.00080	.00080	.00103	.00131	.00018	.00092	-----	-----	-----
62. Scientific & Controlling Instruments.....	.00019	.00586	-----	.02827	.00221	-----	.01141	-----	-----	-----
63. Optical, Ophthalmic & Photographic Equipment.....	.00010	.00834	.00750	.00600	-----	.00405	.00299	-----	-----	-----
64. Miscellaneous Manufacturing.....	.00031	.02204	.00919	.00165	.00021	.01490	.00134	-----	.00007	-----
65. Transportation & Warehousing.....	.00764	.00709	.00441	.00032	.00908	.00370	.00497	.21315	.01395	-----
66. Communications, Except Radio & TV Broadcasting.....	.00354	.00516	.02504	.00032	.00679	.00514	.00792	.00336	.00504	-----
67. Radio & TV Broadcasting.....	.00022	-----	.06139	-----	-----	-----	-----	-----	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	.00451	.02067	.01112	-----	.02005	.00772	.01780	.01855	.08452	-----
69. Wholesale & Retail Trade.....	.01666	.04072	.01655	.00187	.08007	.01158	.01740	.01796	.00828	-----
70. Finance & Insurance.....	.03440	.01670	.01222	.00085	.02691	.02264	.01165	.00160	.00958	-----
71. Real Estate & Rental.....	.02124	.04702	.03665	.00196	.03966	.04909	.06750	.01257	.01492	-----
72. Hotels; Personal and Repair Services exc. Auto.....	.00330	.02713	.00446	-----	-----	-----	.00429	-----	.00143	-----
73. Business Services.....	.02026	.02725	.02333	.00350	.02046	.03808	.02579	-----	.01786	-----
74. Research & Development.....	-----	-----	-----	-----	-----	-----	.00179	-----	.00042	-----
75. Automobile Repair & Services.....	.00181	.00971	.00486	-----	.01722	-----	.00214	.01110	.00103	-----
76. Amusements.....	.00132	-----	.00106	.00085	-----	.22862	.00364	-----	-----	-----
77. Medical, Educational Services & Nonprofit Organizations.....	.00051	.00105	.00016	.12320	.00105	.00100	.01380	-----	.00005	-----
78. Federal Government Enterprises.....	.00471	.00061	.02817	-----	.00048	.00057	.00072	.00205	.00090	-----
79. State & Local Government Enterprises.....	.00739	.00185	.00036	-----	.00259	.00025	.00064	.00032	.00012	-----
80. Gross Imports of Goods & Services.....	-----	-----	-----	-----	-----	.01618	.00035	.03662	-----	-----
81. Business Travel, Entertainment & Gifts.....	.00090	.01200	.00832	.00266	.00356	.01397	.01827	.01061	.00296	-----
82. Office Supplies.....	.00045	.00161	.01013	-----	.00041	.00117	.00379	.00644	.00606	-----
A. Adjustment for Scrap and By-Products.....	-----	.00231	-----	-----	.00591	-----	-----	-----	-----	-----
A. Value Added.....	.72844	.61549	.47273	.07170	.49483	.55157	.69311	.36815	.55643	-----
T. Total.....	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	-----

TABLE C-34.—UNITED STATES 1961 DIRECT INPUT COEFFICIENTS (Cont.)

[Productary prices, 1961 dollars]

	Business travel, enter- tainment and gifts	Office supplies
	81	82
For the composition of inputs to an industry, read the column for that industry.		
1. Livestock & Livestock Products.....	.00337	-----
2. Other Agricultural Products.....	.00956	-----
3. Forestry & Fishery Products.....	.00222	-----
4. Agricultural, Forestry & Fishery Services.....	-----	-----
5. Iron & Ferrous Ores Mining.....	-----	-----
6. Nonferrous Metal Ores Mining.....	-----	-----
7. Coal Mining.....	-----	-----
8. Crude Petroleum & Natural Gas.....	-----	-----
9. Stone and Clay Mining and Quarrying.....	-----	-----
10. Chemical & Fertilizer Mineral Mining.....	-----	-----
11. New Construction.....	-----	-----
12. Maintenance & Repair Construction.....	-----	-----
13. Ordnance & Accessories.....	.00073	-----
14. Food & Kindred Products.....	.79204	-----
15. Tobacco Manufactures.....	.02073	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	-----	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	-----	-----
18. Apparel.....	.00115	-----
19. Miscellaneous Fabricated Textile Products.....	-----	-----
20. Lumber & Wood Products, Except Containers.....	.00074	-----
21. Wooden Containers.....	-----	-----
22. Household Furniture.....	-----	-----
23. Other Furniture & Fixtures.....	-----	-----
24. Paper & Allied Products, Except Containers.....	.00044	.23890
25. Paperboard Containers & Boxes.....	-----	-----
26. Printing & Publishing.....	.00097	.57444
27. Chemicals & Selected Chemical Products.....	-----	.00A80
28. Plastics & Synthetic Materials.....	-----	-----
29. Drugs, Cleaning & Toilet Preparations.....	.00549	-----
30. Paints & Allied Products.....	-----	-----
31. Petroleum Refining & Related Industries.....	-----	-----
32. Rubber & Miscellaneous Plastics Products.....	.00030	.00671
33. Leather Tanning & Industrial Leather Products.....	-----	-----
34. Footwear & Other Leather Products.....	.00346	-----
35. Glass & Glass Products.....	.00357	.00042
36. Stone & Clay Products.....	.00074	-----
37. Primary Iron & Steel Manufacturing.....	-----	.00143
38. Primary Nonferrous Metal Manufacturing.....	-----	-----
39. Metal Containers.....	-----	-----
40. Heating, Plumbing & Structural Metal Products.....	-----	-----
41. Stampings, Screw Machine Products & Bolts.....	-----	-----
42. Other Fabricated Metal Products.....	.00056	.00288
43. Engines & Turbines.....	-----	-----
44. Farm Machinery & Equipment.....	-----	-----
45. Construction, Mining & Oil Field Machinery.....	-----	-----
46. Materials Handling Machinery & Equipment.....	-----	-----
47. Metalworking Machinery & Equipment.....	-----	-----
48. Special Industry Machinery & Equipment.....	-----	-----
49. General Industrial Machinery & Equipment.....	-----	-----
50. Machine Shop Products.....	-----	-----
51. Office, Computing & Accounting Machines.....	-----	.00489
52. Service Industry Machines.....	-----	-----
53. Electric Industrial Equipment & Apparatus.....	.00395	-----
54. Household Appliances.....	-----	-----
55. Electric Lighting & Wiring Equipment.....	-----	-----
56. Radio, Television & Communication Equipment.....	.00538	-----
57. Electronic Components & Accessories.....	-----	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	-----	-----
59. Motor Vehicles & Equipment.....	-----	-----
60. Aircraft & Parts.....	-----	-----
61. Other Transportation Equipment.....	-----	-----
62. Scientific & Controlling Instruments.....	.00125	-----
63. Optical, Ophthalmic & Photographic Equipment.....	.00188	.00929
64. Miscellaneous Manufacturing.....	.00644	.19424
65. Transportation & Warehousing.....	.38830	-----
66. Communications; Except Radio & TV Broadcasting.....	-----	-----
67. Radio & TV Broadcasting.....	-----	-----
68. Electric, Gas, Water & Sanitary Services.....	-----	-----
69. Wholesale & Retail Trade.....	.05060	-----
70. Finance & Insurance.....	-----	-----
71. Real Estate & Rental.....	-----	-----
72. Hotels; Personal & Repair Services exc. Auto.....	.15431	-----
73. Business Services.....	-----	-----
74. Research & Development.....	-----	-----
75. Automobile Repair & Services.....	-----	-----
76. Amusements.....	.02122	-----
77. Medical, Educational Services & Nonprofit Organizations.....	.00544	-----
78. Federal Government Enterprises.....	-----	-----
79. State & Local Government Enterprises.....	-----	-----
80. Gross Imports of Goods & Services.....	.02620	-----
81. Business Travel, Entertainment & Gifts.....	-----	-----
82. Office Supplies.....	-----	-----
A. Adjustment for Scrap and By-Products.....	-----	-----
V.A. Value Added.....	-----	-----
T. Total.....	1.00000	1.00000

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS
[Products' prices, 1961 dollars]

Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the head of the column.	Livestock and live-stock products	Other agricultural products	Forestry and fishery products	Agricultural, forestry and fishery services	Iron and ferroalloy ores and alloying	Nonferrous metal ores and alloying	Coal mining	Crude petroleum and natural gas	Stone and clay mining and quarrying	Chemical and fertilizer mineral mining
	1	2	3	4	5	6	7	8	9	10
1. Livestock and Livestock Products.....	1.27715	.10442	.11233	.20344	.00335	.00306	.00274	.00446	.00269	.00293
2. Other Agricultural Products.....	.38428	1.08285	.13364	.44014	.00477	.00443	.00411	.00593	.00369	.00377
3. Forestry & Fishery Products.....	.00131	.00076	1.01477	.00036	.00100	.00055	.00146	.00033	.00042	.00046
4. Agricultural, Forestry & Fishery Services.....	.04031	.04406	.02051	1.02227	.00035	.00033	.00035	.00041	.00030	.00029
5. Iron & Ferroalloy Ores Mining.....	.00072	.00092	.00050	.00056	1.05995	.01650	.00217	.00051	.00264	.00290
6. Nonferrous Metal Ores Mining.....	.00064	.00098	.00043	.00056	.04199	1.20583	.00206	.00057	.00196	.00193
7. Coal Mining.....	.00186	.00172	.00113	.00112	.00626	.00534	1.21567	.00108	.00492	.00471
8. Crude Petroleum & Natural Gas.....	.01483	.02832	.01271	.01381	.01234	.01342	.01407	1.03359	.02162	.01884
9. Stone and Clay Mining and Quarrying.....	.00198	.00439	.00089	.00194	.00067	.00146	.00154	.00048	1.01349	.01939
10. Chemical & Fertilizer Mineral Mining.....	.00160	.00382	.00077	.00167	.00079	.00305	.00115	.00035	.00155	1.06645
1. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
2. Maintenance & Repair Construction.....	.02967	.03195	.01202	.01878	.01642	.01336	.01026	.01801	.01107	.01250
3. Ordnance & Accessories.....	.00012	.00015	.00009	.00009	.00014	.00017	.00014	.00010	.00014	.00015
4. Food & Kindred Products.....	.19761	.02099	.04239	.03969	.00470	.00581	.00520	.00492	.00544	.00725
5. Tobacco Manufactures.....	.00020	.00019	.00016	.00014	.00022	.00028	.00026	.00026	.00028	.00038
6. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00293	.00412	.00436	.00501	.00118	.00463	.00298	.00097	.00257	.00196
7. Miscellaneous Textile Goods & Floor Coverings.....	.00252	.00365	.01189	.01362	.00058	.00094	.00150	.00094	.00235	.00108
8. Apparel.....	.00044	.00037	.00033	.00029	.00028	.00037	.00040	.00025	.00042	.00034
9. Miscellaneous Fabricated Textile Products.....	.00214	.00291	.00086	.00147	.00033	.00050	.00041	.00027	.00047	.00048
10. Lumber & Wood Products, Except Containers.....	.00373	.00511	.00366	.00310	.00942	.00394	.01417	.00238	.00324	.00307
1. Wooden Containers.....	.00200	.00453	.00071	.00197	.00018	.00018	.00020	.00011	.00025	.00017
2. Household Furniture.....	.00009	.00010	.00021	.00010	.00012	.00008	.00016	.00007	.00008	.00008
3. Other Furniture & Fixtures.....	.00007	.00008	.00011	.00005	.00006	.00005	.00009	.00005	.00006	.00005
4. Paper & Allied Products, Except Containers.....	.00957	.00854	.01953	.00923	.00394	.00632	.00999	.00559	.01833	.01233
5. Paperboard Containers & Boxes.....	.00565	.00265	.00905	.00625	.00109	.00172	.00258	.00109	.00464	.00272
26. Printing & Publishing.....	.01258	.01719	.02607	.00990	.00640	.00835	.00747	.01361	.00897	.00776
27. Chemicals & Selected Chemical Products.....	.03456	.07916	.01647	.03255	.02359	.06224	.03512	.01028	.02676	.04909
28. Plastics & Synthetic Materials.....	.00307	.00477	.00486	.00461	.00181	.00355	.00436	.00182	.00633	.00335
29. Drugs, Cleaning & Toilet Preparations.....	.00349	.00189	.00116	.00138	.00090	.00163	.00114	.00078	.00171	.00148
30. Paints & Allied Products.....	.00209	.00728	.00237	.00135	.00138	.00152	.00162	.00170	.00120	.00126
31. Petroleum Refining & Related Industries.....	.02749	.05492	.02473	.02643	.02086	.01998	.02231	.01090	.03841	.02303
32. Rubber & Miscellaneous Plastics Products.....	.00737	.01118	.01037	.00690	.00369	.00727	.01463	.00546	.02510	.00938
33. Leather Tanning & Industrial Leather Products.....	.00009	.00012	.00009	.00008	.00006	.00007	.00010	.00005	.00011	.00008
34. Footwear & Other Leather Products.....	.00021	.00030	.00014	.00016	.00008	.00010	.00012	.00009	.00013	.00012
35. Glass & Glass Products.....	.00293	.00102	.00102	.00093	.00097	.00068	.00080	.00057	.00088	.00071
36. Stone & Clay Products.....	.00295	.00425	.00169	.00227	.00335	.01065	.00611	.00205	.07536	.00452
37. Primary Iron & Steel Manufacturing.....	.00971	.00936	.00746	.00682	.00358	.07924	.03572	.00797	.03813	.03987
38. Primary Nonferrous Metal Manufacturing.....	.00456	.00554	.00348	.00374	.00783	.01732	.01961	.00524	.00834	.01186
39. Metal Containers.....	.00593	.00231	.00161	.00185	.00053	.00085	.00070	.00039	.00072	.00080
40. Heating, Plumbing & Structural Metal Products.....	.00180	.00194	.00159	.00119	.00273	.00217	.00261	.00198	.00205	.00181
41. Stampings, Screw Machine Products & Bolts.....	.00271	.00147	.00107	.00115	.00165	.00260	.00941	.00153	.00255	.00264
42. Rubber & Fabricated Metal Products.....	.00500	.00509	.00319	.00869	.00376	.00376	.01109	.00674	.00605	.00494
43. Engines & Turbines.....	.00058	.00091	.00116	.00047	.00149	.00171	.00176	.00197	.00180	.00169
44. Farm Machinery & Equipment.....	.00406	.01027	.00195	.00428	.00065	.00083	.00107	.00050	.00114	.00078
45. Construction, Mining & Oil Field Machinery.....	.00053	.00090	.00048	.00046	.02342	.02906	.04558	.00397	.04763	.02902
46. Materials Handling Machinery & Equipment.....	.00016	.00024	.00017	.00013	.00036	.00056	.00613	.00019	.01634	.00697
47. Metalworking Machinery & Equipment.....	.00090	.00103	.00073	.00076	.00149	.00281	.00701	.00104	.00257	.00188
48. Special Industry Machinery & Equipment.....	.00064	.00115	.00052	.00063	.00054	.00111	.00093	.00132	.00096	.00093
49. General Industrial Machinery & Equipment.....	.00099	.00158	.00100	.00086	.00277	.00585	.00726	.01012	.00923	.00530
50. Machine Shop Products.....	.00084	.00093	.00055	.00055	.00100	.00158	.00173	.00064	.00200	.00146
51. Office, Computing & Accounting Machines.....	.00113	.00166	.00249	.00091	.00059	.00077	.00070	.00131	.00084	.00076
52. Service Industry Machines.....	.00031	.00041	.00052	.00024	.00025	.00030	.00036	.00041	.00037	.00029
53. Electric Industrial Equipment & Apparatus.....	.00097	.00122	.00082	.00073	.00246	.00757	.00537	.00509	.00518	.00825
54. Household Appliances.....	.00027	.00031	.00027	.00020	.00024	.00026	.00031	.00024	.00025	.00026
55. Electric Lighting & Wiring Equipment.....	.00073	.00070	.00053	.00044	.00094	.00130	.00279	.00055	.00106	.00074
56. Radio, Television & Communication Equipment.....	.00062	.00067	.00062	.00047	.00195	.00067	.00063	.00059	.00068	.00070
57. Electronic Components & Accessories.....	.00043	.00050	.00043	.00032	.00078	.00088	.00058	.00162	.00065	.00073
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00141	.00167	.00053	.00085	.00085	.00077	.00079	.00050	.00082	.00080
59. Motor Vehicles & Equipment.....	.00539	.00477	.00213	.00271	.00333	.00399	.00707	.00294	.00838	.00625
60. Aircraft & Parts.....	.00063	.00061	.00057	.00041	.00093	.00081	.00075	.00065	.00084	.00095
61. Other Transportation Equipment.....	.00088	.00080	.00156	.00056	.00437	.00114	.00735	.00068	.00120	.00193
62. Scientific & Controlling Instruments.....	.00056	.00048	.00036	.00033	.00071	.00110	.00069	.00055	.00055	.00046
63. Optical, Ophthalmic & Photographic Equipment.....	.00053	.00072	.00100	.00042	.00037	.00048	.00039	.00057	.00057	.00057
64. Miscellaneous Manufacturing.....	.00167	.00189	.00391	.00162	.00115	.00138	.00335	.00137	.00249	.00185
65. Transportation & Warehousing.....	.05705	.03867	.03624	.03124	.11195	.05988	.02825	.03818	.04025	.09608
66. Communications, Except Radio & TV Broadcasting.....	.00887	.00868	.00821	.00922	.00494	.00583	.00429	.00385	.00554	.00576
67. Radio & TV Broadcasting.....	.00233	.00362	.00587	.00198	.00112	.00138	.00123	.00298	.00155	.00134
68. Electric, Gas, Water & Sanitary Services.....	.02010	.02702	.00966	.01291	.02919	.05123	.04591	.01566	.04387	.07138
69. Wholesale & Retail Trade.....	.08862	.07054	.04094	.04323	.03678	.04958	.06076	.02592	.05834	.04713
70. Finance & Insurance.....	.03111	.03141	.03885	.02162	.01945	.03264	.02510	.02517	.02450	.01848
71. Real Estate & Rental.....	.06651	.11016	.05683	.06190	.09383	.05657	.04331	.15715	.04304	.02780
72. Hotels, Personal & Repair Services exc. Auto.....	.00211	.00220	.00190	.00148	.00293	.00354	.00264	.00256	.00347	.00386
73. Business Services.....	.03766	.05834	.09521	.03187	.01792	.02225	.01988	.04785	.02498	.02167
74. Research & Development.....	.00016	.00026	.00010	.00014	.00013	.00027	.00018	.00007	.00017	.00020
75. Automobile Repair & Services.....	.00846	.00572	.00322	.00370	.00404	.00292	.00267	.00364	.00291	.00374
76. Amusements.....	.00121	.00155	.00201	.00091	.00092	.00097	.00084	.00146	.00097	.00104
77. Medical, Educational Services & Nonprofit Organizations.....	.00982	.00225	.00226	.00284	.00163	.00214	.00223	.00164	.00197	.00193
78. Federal Government Enterprises.....	.00392	.00456	.00534	.00342	.00342	.00441	.00438	.00329	.00340	.00428
79. State & Local Government Enterprises.....	.00523	.00516	.00309	.00343	.00763	.00943	.00775	.00491	.00871	.01259
80. Gross Imports of Goods & Services.....	.03205	.03342	.21305	.02007	.28920	.17613	.01292	.08743	.07012	.13008
81. Business Travel, Entertainment & Gifts.....	.00733	.00717	.00586	.00513	.00847	.01074	.01011	.00981	.01061	.01481
82. Office Supplies.....	.00134	.00150	.00202	.00099	.00105	.00127	.00121	.00131	.00127	.00146

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)

(Producers' prices, 1961 dollars)

	New construction	Maintenance and repair construction	Ordinance and accessories	Food and kindred products	Tobacco manufactures	Bread and cake, confectionery, and thread mills	Miscellaneous textile goods and floor coverings	Apparel	Miscellaneous fabric products, except textile products	Lumber and wood products, except containers
	11	12	13	14	15	16	17	18	19	20
1. Livestock & Livestock Products.....	.00506	.00308	.00467	.03691	.02853	.04677	.04757	.01885	.02672	.02081
2. Other Agricultural Products.....	.01238	.00915	.00532	.21060	.25296	.19306	.05655	.06876	.09613	.05098
3. Forestry & Fishery Products.....	.00853	.00352	.00069	.00624	.00074	.00089	.00098	.01565	.00154	.13156
4. Agricultural, Forestry & Fishery Services.....	.00099	.00045	.00042	.01563	.01062	.00850	.00329	.00336	.00443	.00573
5. Iron & Ferrous Alloy Ores Mining.....	.00604	.00292	.00417	.00156	.00051	.00111	.00101	.00063	.00092	.00083
6. Nonferrous Metal Ores Mining.....	.00508	.00374	.01070	.00086	.00070	.00138	.00131	.00086	.00117	.00107
7. Coal Mining.....	.00490	.00252	.00364	.00311	.00169	.00943	.00424	.00275	.00387	.00221
8. Crude Petroleum & Natural Gas.....	.01865	.01676	.00745	.01419	.00957	.01717	.01316	.00879	.01211	.01522
9. Stone and Clay Mining and Quarrying.....	.02009	.01133	.00139	.00169	.00132	.00157	.00114	.00077	.00116	.00128
10. Chemical & Fertilizer Mineral Mining.....	.00125	.00110	.00071	.00143	.00144	.00393	.00350	.00180	.00246	.00112
11. New Construction.....	1.00000									
12. Maintenance & Repair Construction.....	.01195	1.00865	.01038	.02283	.01118	.01672	.01299	.01125	.01372	.01470
13. Ordnance & Accessories.....	.00051	.00023	1.02865	.00017	.00011	.00037	.00035	.00021	.00041	.00015
14. Food & Kindred Products.....	.00905	.00723	.01258	1.27345	.01734	.01979	.01833	.01243	.01575	.01389
15. Tobacco Manufactures.....	.00040	.00024	.00073	.00037	1.22992	.00037	.00035	.00042	.00048	.00042
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00343	.00175	.00461	.00666	.00240	1.54364	.27708	.50383	.73215	.00401
17. Miscellaneous Textile Goods & Floor Coverings.....	.00214	.00116	.00397	.00229	.00152	.04569	1.12920	.02575	.11732	.00364
18. Apparel.....	.00086	.00049	.00193	.00131	.00029	.00326	.00468	1.19644	.01341	.00249
19. Miscellaneous Fabricated Textile Products.....	.00073	.00048	.00059	.00377	.00103	.00699	.00762	.01818	1.07139	.00101
20. Lumber & Wood Products, Except Containers.....	.00911	.03613	.00529	.00613	.00060	.00534	.00629	.00408	.00754	1.39610
21. Wooden Containers.....	.00090	.00047	.00113	.00299	.00293	.00107	.00053	.00050	.00068	.00531
22. Household Furniture.....	.00617	.00028	.00019	.00014	.00007	.00028	.00351	.00023	.00393	.00350
23. Other Furniture & Fixtures.....	.00378	.00095	.00066	.00009	.00006	.00010	.00012	.00013	.00324	.00065
24. Paper & Allied Products, Except Containers.....	.00289	.01357	.01380	.02635	.03470	.02771	.03736	.02093	.04302	.02549
25. Paperboard Containers & Boxes.....	.00546	.00606	.00749	.02245	.01724	.01749	.01472	.01584	.02240	.01019
26. Printing & Publishing.....	.02356	.00771	.01422	.02183	.02543	.01625	.01340	.01444	.01648	.01862
27. Chemicals & Selected Chemical Products.....	.02712	.03282	.01831	.02975	.03454	.11730	.11041	.05316	.07187	.03162
28. Plastics & Synthetic Materials.....	.00731	.01075	.00975	.00402	.02540	.14519	.19436	.06299	.08977	.01563
29. Drugs, Cleaning & Toilet Preparations.....	.00238	.00210	.00261	.00620	.00298	.00753	.00562	.00357	.00544	.00326
30. Paints & Allied Products.....	.00613	.05198	.00229	.00241	.00114	.00304	.00326	.00180	.00262	.00833
31. Petroleum Refining & Related Industries.....	.03474	.03949	.01234	.02561	.01788	.02931	.02242	.01456	.02024	.02801
32. Rubber & Miscellaneous Plastics Products.....	.01430	.00848	.03376	.00940	.00709	.01602	.02478	.01063	.04440	.01518
33. Leather Tanning & Industrial Leather Products.....	.00019	.00011	.00030	.00012	.00013	.00047	.00054	.00451	.00125	.00016
34. Footwear & Other Leather Products.....	.00021	.00013	.00041	.00020	.00014	.00028	.00068	.00140	.00333	.00028
35. Glass & Glass Products.....	.00419	.00615	.00357	.01373	.00072	.00505	.00297	.00222	.00356	.00297
36. Stone & Clay Products.....	.09667	.04140	.01110	.00338	.00180	.00321	.00345	.00197	.00290	.00862
37. Primary Iron & Steel Manufacturing.....	.10517	.04800	.06400	.02566	.00585	.00975	.00857	.00661	.01013	.01177
38. Primary Nonferrous Metal Manufacturing.....	.05034	.03762	.11572	.00589	.00544	.00772	.00746	.00600	.00813	.00891
39. Metal Containers.....	.00116	.00322	.00091	.01372	.00272	.00218	.00200	.00113	.00155	.00134
40. Heating, Plumbing & Structural Metal Products.....	.09728	.04966	.00508	.00170	.00079	.00146	.00116	.00094	.00130	.00201
41. Stampings, Screw Machine Products & Bolts.....	.00834	.00462	.01929	.00540	.00100	.00179	.00179	.00135	.00229	.00516
42. Other Fabricated Metal Products.....	.02865	.00938	.02377	.00601	.00439	.00150	.00598	.00487	.00780	.01550
43. Engines & Turbines.....	.00157	.00069	.00295	.00070	.00059	.00061	.00051	.00040	.00051	.00072
44. Farm Machinery & Equipment.....	.00122	.00045	.00142	.00247	.00282	.00215	.00121	.00093	.00127	.00088
45. Construction, Mining & Oil Field Machinery.....	.00582	.00250	.00191	.00060	.00042	.00079	.00061	.00043	.00060	.00059
46. Materials Handling Machinery & Equipment.....	.00657	.00093	.00055	.00018	.00012	.00029	.00024	.00016	.00022	.00094
47. Metalworking Machinery & Equipment.....	.00418	.00201	.02337	.00174	.00076	.00177	.00158	.00098	.00170	.00157
48. Special Industry Machinery & Equipment.....	.00179	.00105	.00351	.00081	.00079	.00150	.00433	.00413	.00606	.00314
49. General Industrial Machinery & Equipment.....	.01063	.00341	.01438	.00133	.00079	.00198	.00142	.00101	.00208	.00327
50. Machine Shop Products.....	.00306	.00149	.12021	.00117	.00092	.00088	.00085	.00059	.00107	.00151
51. Office, Computing & Accounting Machines.....	.00239	.00077	.00382	.00175	.00217	.00142	.00119	.00122	.00143	.00113
52. Service Industry Machines.....	.00595	.00200	.00490	.00043	.00042	.00040	.00032	.00031	.00041	.00038
53. Electric Industrial Equipment & Apparatus.....	.01506	.00804	.03052	.00140	.00076	.00191	.00157	.00119	.00177	.00147
54. Household Appliances.....	.00457	.00348	.00194	.00038	.00019	.00034	.00032	.00033	.00040	.00036
55. Electric Lighting & Wiring Equipment.....	.01898	.00912	.01521	.00119	.00054	.00109	.00098	.00066	.00103	.00257
56. Radio, Television & Communication Equipment.....	.00211	.00225	.05228	.00078	.00054	.00098	.00092	.00079	.00107	.00079
57. Electronic Components & Accessories.....	.00193	.00119	.01575	.00098	.00040	.00072	.00065	.00063	.00092	.00064
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00195	.00118	.00328	.00113	.00061	.00078	.00062	.00047	.00067	.00108
59. Motor Vehicles & Equipment.....	.00571	.00275	.01474	.00474	.00198	.00289	.00290	.00188	.00285	.00506
60. Aircraft & Parts.....	.00158	.00081	.28353	.00099	.00048	.00122	.00150	.00074	.00163	.00104
61. Other Transportation Equipment.....	.00231	.00113	.00531	.00133	.00061	.00111	.00108	.00100	.00101	.00498
62. Scientific & Controlling Instruments.....	.00691	.00245	.03474	.00065	.00035	.00076	.00074	.00092	.00525	.00070
63. Optical, Ophthalmic & Photographic Equipment.....	.00106	.00043	.00207	.00081	.00097	.00121	.00122	.00082	.00102	.00065
64. Miscellaneous Manufacturing.....	.00553	.00485	.00621	.00291	.00339	.00562	.01479	.02803	.02536	.00492
65. Transportation & Warehousing.....	.07721	.04786	.04783	.08847	.03380	.07506	.07748	.04767	.06372	.10300
66. Communications: Except Radio & TV Broadcasting.....	.01012	.00825	.01137	.01024	.00591	.00899	.00899	.00923	.00984	.00908
67. Radio & TV Broadcasting.....	.00482	.00128	.00200	.00387	.00504	.00275	.00216	.00230	.00249	.00231
68. Electric, Gas, Water & Sanitary Services.....	.02662	.01540	.02360	.02671	.01193	.03942	.02976	.02279	.03066	.02327
69. Wholesale & Retail Trade.....	.13639	.10226	.06797	.09197	.04447	.04038	.09429	.08419	.10935	.08793
70. Finance & Insurance.....	.02780	.01418	.02156	.02844	.01566	.02992	.02890	.02636	.02782	.02767
71. Real Estate & Rental.....	.03280	.01954	.02517	.04853	.03635	.04516	.03484	.03965	.04479	.03714
72. Hotels: Personal & Repair Services excl. Auto.....	.00421	.00235	.00692	.00393	.00246	.00586	.00488	.00734	.00698	.00604
73. Business Services.....	.07818	.02078	.03232	.06261	.08169	.04444	.03494	.03723	.04027	.03741
74. Research & Development.....	.00029	.00023	.00093	.00027	.00021	.00113	.00102	.00048	.00067	.00018
75. Automobile Repair & Services.....	.01122	.00473	.00310	.01189	.00349	.00563	.00512	.00385	.00605	.01668
76. Amusements.....	.00214	.00085	.00166	.00182	.00179	.00154	.00133	.00146	.00161	.00149
77. Medical, Educational Services & Nonprofit Organizations.....	.00288	.00161	.00283	.00994	.00233	.00362	.00312	.00332	.00353	.00286
78. Federal Government Enterprises.....	.00578	.00294	.00485	.00526	.00691	.00652	.00660	.00669	.00702	.00640
79. State & Local Government Enterprises.....	.00708	.00410	.00524	.00714	.00320	.00846	.00715	.00529	.00726	.00761
80. Gross Imports of Goods & Services.....	.03139	.01844	.03367	.06997	.03132	.06867	.18023	.03908	.03903	.12496
81. Business Travel, Entertainment & Gifts.....	.01539	.00905	.03625	.01156	.00691	.01417	.01336	.01598	.01827	.01632
82. Office Supplies.....	.00236	.00115	.00272	.00214	.00183	.00224	.00196	.00235	.00244	.00189

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT REQUIREMENTS) (Cont.)

[Producers' prices, 1961 dollars]

Entry represents the output required, directly and indirectly, on the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the end of the column.	Wooden containers	Household furniture	Other furniture and fixtures	Paper and allied products, except containers	Paperboard containers and boxes	Printing and publishing	Chemicals and selected chemical products	Plastics and synthetic materials	Drugs, cleaning, and toilet preparations	Paints and allied products
	21	22	23	24	25	26	27	28	29	30
Livestock & Livestock Products.....	.01033	.01185	.00607	.00805	.00546	.00660	.00953	.00722	.01599	.01772
Other Agricultural Products.....	.02246	.02340	.00950	.01158	.00758	.00935	.01071	.00909	.01372	.01414
Forestry & Fishery Products.....	.05075	.01674	.00897	.01155	.00532	.00259	.00336	.00210	.00151	.00171
Agricultural, Forestry & Fishery Services.....	.00246	.00169	.00084	.00100	.00065	.00065	.00076	.00063	.00098	.00106
Iron & Ferroalloy Ores Mining.....	.00380	.00349	.00844	.00102	.00088	.00059	.00752	.00326	.00225	.00443
Nonferrous Metal Ores Mining.....	.00108	.00293	.00417	.00137	.00092	.00094	.01023	.00434	.00228	.00366
Coal Mining.....	.00336	.00395	.00581	.01145	.00642	.00332	.00826	.01017	.00391	.00541
Crude Petroleum & Natural Gas.....	.01333	.00954	.00861	.01745	.01441	.00790	.05406	.01368	.01793	.02555
Stone and Clay Mining and Quarrying.....	.00114	.00145	.00198	.00566	.00278	.00147	.00416	.00241	.00236	.00307
Chemical & Fertilizer Mineral Mining.....	.00064	.00122	.00094	.00422	.00214	.00161	.03791	.01499	.00595	.01123
New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Maintenance & Repair Construction.....	.01308	.01152	.01068	.01576	.01618	.01583	.01368	.01844	.01110	.01345
Ordinance & Accessories.....	.00015	.00023	.00053	.00025	.00035	.00053	.00090	.00127	.00048	.00048
Food & Kindred Products.....	.01119	.02117	.01084	.01873	.01282	.01558	.02700	.01977	.04729	.05661
Tobacco Manufactures.....	.00050	.00047	.00051	.00039	.00044	.00083	.00071	.00043	.00051	.00066
Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00276	.09372	.01459	.01677	.00887	.00483	.00574	.00674	.00415	.00402
Miscellaneous Textile Goods & Floor Coverings.....	.00204	.02157	.02277	.00581	.00359	.00340	.00245	.00367	.00238	.00192
Apparel.....	.00125	.00162	.00221	.00166	.00205	.00061	.00118	.00137	.00113	.00123
Miscellaneous Fabricated Textile Products.....	.00069	.00235	.00170	.00470	.00236	.00134	.00496	.00238	.00209	.00193
Lumber & Wood Products, Except Containers.....	.53780	.17546	.09340	.11985	.05442	.02500	.00938	.01135	.00938	.00764
Wooden Containers.....	1.03636	.00121	.00097	.00130	.00118	.00039	.00061	.00064	.00053	.00051
Household Furniture.....	.00521	1.01667	.03175	.00044	.00024	.00017	.00013	.00014	.00019	.00011
Other Furniture & Fixtures.....	.00102	.00718	1.01688	.00040	.00021	.00055	.00009	.00011	.00013	.00008
Paper & Allied Products, Except Containers.....	.00170	.02816	.02741	1.24802	.54375	.24884	.02916	.07751	.05221	.03866
Paperboard Containers & Boxes.....	.00667	.02614	.02799	.03975	1.06006	.01465	.01166	.01447	.04176	.01924
Printing & Publishing.....	.01586	.01584	.01405	.02941	.02607	1.16786	.01778	.01762	.06154	.01987
Chemicals & Selected Chemical Products.....	.01693	.03366	.02488	.07087	.03983	.03919	1.28064	.49667	.19543	.37372
Plastics & Synthetic Materials.....	.00749	.02525	.01377	.01985	.01430	.00586	.02844	1.04575	.01132	.14326
Drugs, Cleaning & Toilet Preparations.....	.00267	.00260	.00225	.00477	.00459	.00252	.01563	.01889	1.06836	.01840
Paints & Allied Products.....	.00507	.02353	.01986	.00246	.00188	.00146	.00581	.00909	.00445	1.00569
Petroleum Refining & Related Industries.....	.02353	.01586	.01388	.02971	.02524	.01294	.07977	.05718	.03232	.04640
Rubber & Miscellaneous Plastics Products.....	.00966	.05039	.01788	.02485	.02158	.00841	.01453	.03046	.01813	.01397
Leather Tanning & Industrial Leather Products.....	.00021	.00190	.00224	.00016	.00017	.00015	.00016	.00014	.00016	.00015
Footwear & Other Leather Products.....	.00021	.00057	.00036	.00032	.00036	.00030	.00023	.00020	.00024	.00022
Glass & Glass Products.....	.00188	.01701	.04116	.00152	.00378	.00103	.00340	.00263	.02628	.00237
Stone & Clay Products.....	.00741	.00823	.00933	.00964	.00537	.00322	.00774	.00536	.00632	.01565
Primary Iron & Steel Manufacturing.....	.06816	.05986	.15181	.01177	.01217	.00672	.02624	.01599	.02377	.04649
Primary Nonferrous Metal Manufacturing.....	.00865	.02851	.04042	.01017	.00727	.00770	.03434	.01724	.01168	.01522
Metal Containers.....	.00097	.00229	.00178	.00166	.00513	.00097	.01089	.00653	.02101	.05246
Heating, Plumbing & Structural Metal Products.....	.00202	.00485	.01610	.00148	.00138	.00116	.00173	.00199	.00136	.00218
Stampings, Screw Machine Products & Bolts.....	.00553	.00894	.01270	.00390	.00345	.00185	.00346	.00322	.00589	.00342
Other Fabricated Metal Products.....	.01638	.07017	.04852	.01815	.01203	.00707	.00996	.00820	.01517	.00769
Engines & Turbines.....	.00062	.00063	.00074	.00056	.00050	.00056	.00075	.00067	.00118	.00063
Arm Machinery & Equipment.....	.00064	.00077	.00144	.00046	.00037	.00059	.00056	.00049	.00148	.00073
Construction, Mining & Oil Field Machinery.....	.00069	.00095	.00160	.00117	.00074	.00056	.00243	.00144	.00099	.00119
Materials Handling Machinery & Equipment.....	.00049	.00092	.00042	.00041	.00028	.00018	.00122	.00061	.00033	.00049
Metalworking Machinery & Equipment.....	.00219	.00462	.00679	.00290	.00234	.00129	.00312	.00351	.00230	.00273
Special Industry Machinery & Equipment.....	.00503	.00628	.00207	.00527	.00482	.00474	.01369	.00736	.00548	.00467
General Industrial Machinery & Equipment.....	.00263	.00252	.00484	.00237	.00736	.00125	.00320	.00271	.00191	.00238
Machine Shop Products.....	.00211	.00193	.00302	.00138	.00136	.00075	.00178	.00163	.00124	.00176
Office, Computing & Accounting Machines.....	.00047	.00134	.00499	.00158	.00114	.00287	.00257	.00182	.00577	.00174
Service Industry Machines.....	.00036	.00065	.00715	.00041	.00035	.00048	.00051	.00044	.00133	.00042
Electric Industrial Equipment & Apparatus.....	.00173	.00253	.00439	.00226	.00185	.00185	.00440	.00356	.00229	.00243
Household Appliances.....	.00038	.00155	.00185	.00033	.00039	.00038	.00050	.00048	.00073	.00051
Electric Lighting & Wiring Equipment.....	.00368	.00224	.00253	.00251	.00188	.00099	.00107	.00142	.00087	.00104
Radio, Television & Communication Equipment.....	.00081	.00148	.00311	.00082	.00078	.00172	.00137	.00177	.00133	.00108
Electronic Components & Accessories.....	.00069	.00152	.00194	.00067	.00062	.00103	.00108	.00106	.00117	.00079
Misc. Electrical Machinery, Equipment & Supplies.....	.00113	.00079	.00087	.00066	.00061	.00090	.00077	.00067	.00062	.00068
Motor Vehicles & Equipment.....	.00548	.00380	.00478	.00266	.00249	.00217	.00313	.00279	.00280	.00299
Aircraft & Parts.....	.00096	.00114	.00249	.00105	.00100	.00241	.00227	.00280	.00128	.00160
Other Transportation Equipment.....	.00293	.00156	.00210	.00145	.00127	.00093	.00134	.00127	.00110	.00124
Scientific & Controlling Instruments.....	.00070	.00113	.00932	.00122	.00085	.00092	.00137	.00142	.00742	.00110
Optical, Ophthalmic & Photographic Equipment.....	.00058	.00078	.00071	.00125	.00085	.00079	.00149	.00426	.00242	.00142
Miscellaneous Manufacturing.....	.00354	.00794	.02195	.00386	.00365	.00653	.00459	.00372	.00582	.00380
Transportation & Warehousing.....	.09784	.06575	.05957	.08088	.08424	.05493	.08392	.08414	.06049	.08432
Communications; Except Radio & TV Broadcasting.....	.00876	.01134	.01008	.00886	.00857	.02023	.01091	.01026	.01310	.01159
Radio & TV Broadcasting.....	.00192	.00262	.00203	.00231	.00188	.00452	.00256	.00273	.01293	.00289
Electric, Gas, Water & Sanitary Services.....	.02742	.02534	.02615	.04287	.03060	.02069	.05918	.04411	.02719	.03391
Wholesale & Retail Trade.....	.10004	.09559	.07593	.07593	.08208	.05468	.06737	.06278	.06423	.08343
Finance & Insurance.....	.02683	.02272	.02153	.02245	.02437	.02658	.02931	.02837	.02834	.02897
Real Estate & Rental.....	.03728	.03639	.03269	.02646	.03230	.06141	.04022	.03395	.03961	.04058
Hotels; Personal & Repair Services exc. Auto.....	.00770	.00666	.00627	.00461	.00540	.00720	.00611	.00454	.00559	.00596
Business Services.....	.03100	.04250	.03279	.03743	.03049	.07327	.04152	.04420	.02988	.04674
Research & Development.....	.00017	.00030	.00035	.00095	.00030	.00021	.00315	.00478	.00060	.00145
Automobile Repair & Services.....	.01854	.00724	.00643	.00594	.00582	.00484	.00603	.00523	.00543	.00673
Amusements.....	.00150	.00161	.00145	.00135	.00132	.00248	.00179	.00152	.00441	.00185
Medical, Educational Services & Nonprofit Organizations.....	.00306	.00286	.00267	.00259	.00291	.00260	.00299	.00339	.00272	.00316
Federal Government Enterprises.....	.00495	.00496	.00503	.00549	.00525	.01326	.00739	.01100	.01182	.00834
State & Local Government Enterprises.....	.00807	.00631	.00617	.01029	.00783	.00553	.01145	.00941	.00640	.00804
Gross Imports of Goods & Services.....	.06840	.03866	.03353	.13480	.06322	.03830	.06286	.04446	.03442	.03596
Business Travel, Entertainment & Gifts.....	.01918	.01818	.01960	.01458	.01634	.03199	.02758	.01654	.01968	.02555
Office Supplies.....	.00197	.00240	.00244	.00199	.00219	.00336	.00262	.00197	.00392	.00281

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)
(Producers' prices, 1961 dollars)

Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the head of the column.	Petroleum refining and related industries	Rubber and miscellaneous plastics products	Leather tanning and industrial leather products	Footwear and other leather products	Glass and glass products	Stone and clay products	Primary iron and steel manufacturing	Primary nonferrous metals manufacturing	Metal containers	Heating, plumbing and structural metal products
	31	32	33	34	35	36	37	38	39	40
1. Livestock & Livestock Products.....	.00394	.00855	.00671	.00594	.00369	.00404	.00289	.00294	.00321	.00359
2. Other Agricultural Products.....	.00563	.01382	.00668	.01151	.00565	.00579	.00398	.00421	.00426	.00474
3. Forestry & Fishery Products.....	.00047	.00121	.00200	.00221	.00321	.00106	.00069	.00065	.00072	.00099
4. Agricultural, Forestry & Fishery Services.....	.00038	.00084	.00049	.00070	.00047	.00042	.00034	.00034	.00037	.00040
5. Iron & Ferroalloy Ores Mining.....	.00123	.00169	.00079	.00061	.00090	.00259	.07097	.00787	.03300	.02016
6. Nonferrous Metal Ores Mining.....	.00097	.00219	.00101	.00079	.00136	.00220	.00740	.13433	.00558	.01383
7. Coal Mining.....	.00250	.00515	.00381	.00237	.00465	.01080	.03360	.00765	.01671	.01098
8. Crude Petroleum & Natural Gas.....	.52475	.01421	.00922	.00615	.01263	.01760	.01495	.01236	.01200	.01162
9. Stone and Clay Mining and Quarrying.....	.00458	.00248	.00135	.00095	.01586	.07768	.00611	.00201	.00336	.00299
10. Chemical & Fertilizer Mineral Mining.....	.00160	.00608	.00400	.00165	.00242	.00524	.00148	.00165	.00115	.00090
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.01752	.01221	.00578	.00723	.01108	.01288	.02003	.01079	.01454	.01282
13. Ordnance & Accessories.....	.00029	.00059	.00018	.00021	.00043	.00018	.00053	.00055	.00048	.00090
14. Food & Kindred Products.....	.00645	.01238	.00230	.01079	.00835	.00994	.00687	.00688	.00781	.00890
15. Tobacco Manufactures.....	.00026	.00048	.00022	.00036	.00043	.00044	.00031	.00035	.00034	.00049
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00139	.05976	.00312	.04986	.00302	.00602	.00231	.00577	.00286	.00364
17. Miscellaneous Textile Goods & Floor Coverings.....	.00093	.02175	.00175	.00182	.00140	.00235	.00126	.00190	.00229	.00149
18. Apparel.....	.00090	.00443	.00034	.00752	.00196	.00046	.00155	.00128	.00105	.00204
19. Miscellaneous Fabricated Textile Products.....	.00058	.00217	.00238	.00185	.00075	.00129	.00064	.00082	.00060	.00088
20. Lumber & Wood Products, Except Containers.....	.00323	.00811	.00327	.01742	.03180	.00929	.00593	.00528	.00617	.00891
21. Wooden Containers.....	.00019	.00040	.00218	.00102	.00575	.00180	.00046	.00023	.00083	.00144
22. Household Furniture.....	.00009	.00049	.00007	.00059	.00262	.00012	.00025	.00015	.00020	.00158
23. Other Furniture & Fixtures.....	.00007	.00028	.00004	.00010	.00010	.00009	.00011	.00009	.00011	.00201
24. Paper & Allied Products, Except Containers.....	.01258	.03235	.01165	.02872	.05431	.04267	.01196	.01330	.02345	.01487
25. Paperboard Containers & Boxes.....	.00399	.01505	.00475	.01737	.08897	.01484	.00341	.00368	.01756	.00818
26. Printing & Publishing.....	.01649	.02118	.00961	.02321	.01452	.01489	.01223	.01129	.01619	.01347
27. Chemicals & Selected Chemical Products.....	.04961	.15752	.09925	.04180	.06297	.04920	.02726	.03994	.02600	.02085
28. Plastics & Synthetic Materials.....	.00367	.17882	.00516	.02132	.00497	.01787	.00417	.01944	.00945	.00589
29. Drugs, Cleaning & Toilet Preparations.....	.00437	.00610	.02880	.00810	.00368	.00885	.00387	.00305	.00536	.00248
30. Paints & Allied Products.....	.00216	.00291	.00099	.00107	.00143	.00256	.00278	.00246	.01953	.00502
31. Petroleum Refining & Related Industries.....	1.08962	.02376	.01588	.01002	.01637	.02803	.02296	.01726	.01888	.01886
32. Rubber & Miscellaneous Plastics Products.....	.00552	1.04738	.01437	.00753	.00955	.01792	.00890	.00747	.02268	.00848
33. Leather Tanning & Industrial Leather Products.....	.00007	.00129	1.15195	.25822	.00010	.00024	.00011	.00011	.00057	.00033
34. Footwear & Other Leather Products.....	.00010	.00168	.00303	1.09569	.00017	.00022	.00014	.00015	.00018	.00021
35. Glass & Glass Products.....	.00091	.00952	.00191	.00171	1.05219	.00251	.00102	.00121	.00117	.00566
36. Stone & Clay Products.....	.00492	.00791	.01283	.00713	.03694	1.14579	.02663	.01215	.01633	.01806
37. Primary Iron & Steel Manufacturing.....	.01441	.01642	.00544	.00711	.00966	.01947	1.31302	.05321	.06768	.36339
38. Primary Nonferrous Metal Manufacturing.....	.00699	.01402	.00480	.00584	.00981	.01087	.04507	1.49441	.04392	1.4270
39. Metal Containers.....	.00817	.00216	.00187	.00094	.00128	.00117	.00082	.00088	1.00853	.00154
40. Heating, Plumbing & Structural Metal Products.....	.00187	.00183	.00055	.00087	.00137	.00201	.00588	.00220	.00800	1.02692
41. Stamping, Screw Machine Products & Bolts.....	.00180	.00601	.00175	.00217	.00617	.00354	.01130	.01635	.01996	.02953
42. Other Fabricated Metal Products.....	.01650	.01741	.00406	.01175	.00878	.01747	.02795	.02100	.00986	.04986
43. Engines & Turbines.....	.00138	.00060	.00029	.00041	.00048	.00069	.00127	.00088	.00104	.00446
44. Farm Machinery & Equipment.....	.00053	.00061	.00024	.00055	.00053	.00049	.00264	.00057	.00153	.00293
45. Construction, Mining & Oil Field Machinery.....	.00250	.00090	.00049	.00040	.00125	.00463	.00491	.00417	.00268	.00655
46. Materials Handling Machinery & Equipment.....	.00028	.00035	.00018	.00016	.00044	.00152	.00073	.00053	.00053	.00146
47. Metalworking Machinery & Equipment.....	.00158	.00275	.00135	.00125	.00280	.00312	.01170	.01326	.01946	.01317
48. Special Industry Machinery & Equipment.....	.00132	.00380	.00132	.00128	.00193	.00217	.00276	.00144	.00197	.00651
49. General Industrial Machinery & Equipment.....	.00581	.00268	.00093	.00101	.00283	.00232	.00725	.00786	.01266	.01897
50. Machine Shop Products.....	.00082	.00474	.00062	.00091	.00161	.00161	.01351	.00757	.01316	.01127
51. Office, Computing & Accounting Machines.....	.00158	.00168	.00071	.00146	.00109	.00112	.00103	.00096	.00112	.00201
52. Service Industry Machines.....	.00042	.00047	.00018	.00033	.00043	.00040	.00058	.00081	.00068	.00866
53. Electric Industrial Equipment & Apparatus.....	.00349	.00271	.00148	.00121	.00224	.00298	.00909	.00998	.00722	.01997
54. Household Appliances.....	.00029	.00091	.00017	.00029	.00062	.00033	.00066	.00115	.00284	.00913
55. Electric Lighting & Wiring Equipment.....	.00063	.00281	.00135	.00163	.00310	.00525	.00202	.01054	.00197	.00503
56. Radio, Television & Communication Equipment.....	.00107	.00229	.00044	.00075	.00076	.00082	.00114	.00260	.00114	.00200
57. Electronic Components & Accessories.....	.00124	.00160	.00038	.00135	.00065	.00119	.00100	.00189	.00095	.00408
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00069	.00080	.00035	.00043	.00058	.00088	.00097	.00743	.00090	.00170
59. Motor Vehicles & Equipment.....	.00305	.00250	.00147	.00166	.00230	.00390	.00771	.00760	.00620	.01156
60. Aircraft & Parts.....	.00109	.00472	.00056	.00093	.00113	.00113	.00176	.00137	.00541	.00362
61. Other Transportation Equipment.....	.00122	.00137	.00063	.00073	.00092	.00139	.00312	.00217	.00210	.00814
62. Scientific & Controlling Instruments.....	.00071	.00265	.00090	.00277	.00173	.00135	.00137	.00170	.00156	.01366
63. Optical, Ophthalmic & Photographic Equipment.....	.00071	.00179	.00049	.00193	.00074	.00075	.00062	.00064	.00073	.00095
64. Miscellaneous Manufacturing.....	.00229	.00910	.00195	.00709	.00307	.00540	.00273	.00416	.00321	.00378
65. Transportation & Warehousing.....	.00873	.00454	.04358	.04146	.05938	.04809	.10176	.05904	.08661	.06878
66. Communications; Except Radio & TV Broadcasting.....	.00620	.00969	.00605	.00821	.00770	.00860	.00928	.00848	.00819	.01093
67. Radio & TV Broadcasting.....	.00348	.00321	.00127	.00307	.00210	.00218	.00178	.00175	.00210	.00220
68. Electric, Gas, Water & Sanitary Services.....	.03528	.03422	.01923	.01690	.06598	.05708	.05481	.05658	.04060	.03539
69. Wholesale & Retail Trade.....	.03490	.07298	.04571	.05685	.06518	.06004	.07007	.07049	.08407	.07968
70. Finance & Insurance.....	.02801	.02369	.01594	.02135	.02454	.02702	.02493	.02534	.02599	.02708
71. Real Estate & Rental.....	.09756	.03450	.01533	.02645	.02563	.03009	.02908	.02691	.02829	.02900
72. Hotels, Personal & Repair Services exc. Auto.....	.00251	.00971	.00318	.00642	.00541	.00514	.00422	.00410	.00457	.00581
73. Business Services.....	.03617	.03200	.02065	.04972	.03409	.03533	.02888	.02839	.03047	.03571
74. Research & Development.....	.00064	.00105	.00028	.00022	.00128	.00026	.00139	.00103	.00074	.00085
75. Automobile Repair & Services.....	.00570	.00426	.00314	.00333	.00442	.00821	.00480	.00401	.00474	.00621
76. Amusements.....	.00157	.00172	.00078	.00152	.00132	.00139	.00116	.00113	.00128	.00146
77. Medical, Educational Services & Nonprofit Organizations.....	.00251	.00288	.00191	.00257	.00250	.00245	.00272	.00268	.00303	.00294
78. Federal Government Enterprises.....	.00612	.00647	.00808	.00737	.00702	.00506	.00487	.00457	.00516	.00534
79. State & Local Government Enterprises.....	.00899	.00740	.00454	.00413	.01130	.01235	.01147	.01006	.00883	.00773
80. Gross Imports of Goods & Services.....	.08527	.06711	.06415	.03669	.04263	.04154	.06226	.15062	.03846	.04097
81. Business Travel, Entertainment & Gifts.....	.00998	.01873	.00858	.01385	.01653	.01691	.01210	.01337	.01319	.01889
82. Office Supplies.....	.00180	.00744	.00116	.00241	.00214	.00201	.00183	.00172	.00187	.00214

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)
[Producers' prices, 1961 dollars]

Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the head of the column.

	Stampings, screw machine products and bolts	Other fabricated metal products	Engines and turbines	Farm machinery and equipment	Construction, mining and oil field machinery	Materials handling machinery and equipment	Metalworking machinery and equipment	Special industry machinery and equipment	General industrial machinery and equipment	Machine shop products
	41	42	43	44	45	46	47	48	49	50
1. Livestock & Livestock Products.....	.00359	.00373	.00356	.00304	.00341	.00438	.00338	.00423	.00397	.00337
2. Other Agricultural Products.....	.00465	.00499	.00444	.00553	.00423	.00567	.00415	.00525	.00485	.00422
3. Forestry & Fishery Products.....	.00129	.00172	.00059	.00099	.00064	.00077	.00061	.00126	.00076	.00062
4. Agricultural, Forestry & Fishery Services.....	.00038	.00042	.00038	.00169	.00037	.00056	.00033	.00043	.00041	.00034
5. Iron & Ferrous Ores Mining.....	.01625	.01563	.01140	.01312	.01387	.01192	.00808	.00920	.01080	.00816
6. Nonferrous Metal Ores Mining.....	.00177	.00138	.00859	.00462	.00414	.00560	.00642	.00923	.00746	.01374
7. Coal Mining.....	.00931	.00901	.00790	.00830	.00838	.00700	.00498	.00575	.00664	.00531
8. Crude Petroleum & Natural Gas.....	.01143	.01040	.00918	.00927	.00907	.00892	.00801	.00939	.00885	.01186
9. Stone and Clay Mining and Quarrying.....	.00249	.00256	.00222	.00243	.00239	.00211	.00178	.00185	.00513	.00269
10. Chemical & Fertilizer Mineral Mining.....	.00095	.00115	.00064	.00083	.00066	.00072	.00050	.00068	.00066	.00055
11. New Construction.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12. Maintenance & Repair Construction.....	.01150	.01088	.00983	.01069	.00976	.01066	.01081	.01044	.01097	.01363
13. Ordnance & Accessories.....	.00087	.00095	.00254	.00251	.00071	.00060	.00072	.00131	.00151	.00064
14. Food & Kindred Products.....	.00670	.00907	.00917	.00868	.00871	.01100	.00823	.01074	.01033	.00825
15. Tobacco Manufactures.....	.00047	.00050	.00054	.00047	.00051	.00064	.00049	.00061	.00061	.00049
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00367	.00486	.00348	.00470	.00334	.00700	.00299	.00520	.00387	.00260
17. Miscellaneous Textile Goods & Floor Coverings.....	.00199	.00317	.00223	.00423	.00235	.00321	.00155	.00208	.00154	.00103
18. Apparel.....	.00205	.00205	.00182	.00181	.00174	.00193	.00193	.00204	.00200	.00229
19. Miscellaneous Fabricated Textile Products.....	.00092	.00065	.00080	.00072	.00062	.00067	.00082	.00055	.00058	.00048
20. Lumber & Wood Products, Except Containers.....	.01198	.01641	.00470	.00889	.00536	.00620	.00505	.01165	.00638	.00298
21. Wooden Containers.....	.00080	.00111	.00028	.00059	.00029	.00036	.00027	.00047	.00042	.00024
22. Household Furniture.....	.00049	.00139	.00031	.00028	.00040	.00032	.00022	.00049	.00073	.00017
23. Other Furniture & Fixtures.....	.00027	.00107	.00020	.00063	.00017	.00068	.00014	.00019	.00038	.00011
24. Paper & Allied Products, Except Containers.....	.00200	.01675	.01385	.01263	.01048	.01321	.00807	.01233	.01410	.00769
25. Paperboard Containers & Boxes.....	.01306	.00883	.00866	.00591	.00392	.00540	.00303	.00358	.00518	.00228
26. Printing & Publishing.....	.01324	.01610	.01407	.01678	.01257	.01474	.01023	.01327	.01278	.01053
27. Chemicals & Selected Chemical Products.....	.02314	.02895	.01469	.01967	.01504	.01708	.01168	.01668	.01541	.01151
28. Plastics & Synthetic Materials.....	.01038	.00725	.00659	.01072	.00660	.00959	.00468	.00722	.00543	.00416
29. Drugs, Cleaning & Toilet Preparations.....	.00278	.00234	.00234	.00257	.00228	.00270	.00182	.00242	.00219	.00224
30. Paints & Allied Products.....	.00707	.00364	.00327	.00577	.00319	.00480	.00179	.00205	.00259	.00147
31. Petroleum Refining & Related Industries.....	.01856	.01674	.01517	.01519	.01482	.01461	.01321	.01570	.01430	.02035
32. Rubber & Miscellaneous Plastics Products.....	.01386	.01376	.01505	.04578	.02277	.02916	.01013	.01889	.01143	.00645
33. Leather Tanning & Industrial Leather Products.....	.00038	.00029	.00041	.00014	.00035	.00064	.00028	.00162	.00048	.00077
34. Footwear & Other Leather Products.....	.00050	.00029	.00024	.00026	.00020	.00047	.00026	.00023	.00022	.00116
35. Glass & Glass Products.....	.00273	.00156	.00236	.00178	.00173	.00220	.00178	.00166	.00160	.00099
36. Stone & Clay Products.....	.01763	.01667	.01672	.01497	.01498	.01342	.01438	.01230	.01853	.02751
37. Primary Iron & Steel Manufacturing.....	.29209	.27962	.20368	.23856	.25322	.20771	.14036	.16234	.19320	.14080
38. Primary Nonferrous Metal Manufacturing.....	.12192	.08876	.04122	.03801	.05531	.16861	.09721	.07658	.14827	.00684
39. Metal Containers.....	.00564	.00191	.00086	.00102	.00080	.00098	.00097	.00081	.00082	.00064
40. Heating, Plumbing & Structural Metal Products.....	.01049	.01093	.00619	.00626	.01863	.01739	.00661	.01483	.02361	.00444
41. Stampings, Screw Machine Products & Bolts.....	1.04627	.02560	.03340	.03779	.01819	.02674	.03457	.02001	.01970	.01094
42. Other Fabricated Metal Products.....	.03993	1.05469	.01697	.01947	.02514	.03722	.03319	.02832	.03281	.03024
43. Engines & Turbines.....	.00243	.00181	1.08882	.04623	.02699	.01501	.00301	.00289	.01215	.00429
44. Farm Machinery & Equipment.....	.00212	.00209	.00209	1.04353	.01721	.00701	.00238	.00396	.00360	.00144
45. Construction, Mining & Oil Field Machinery.....	.00226	.00483	.04518	.02039	1.06001	.06026	.00368	.01025	.01146	.00527
46. Materials Handling Machinery & Equipment.....	.00084	.00154	.00263	.00154	.00226	1.04187	.00304	.00586	.00889	.00084
47. Metalworking Machinery & Equipment.....	.01875	.03329	.02626	.02539	.02597	.02616	1.06468	.03115	.02704	.02545
48. Special Industry Machinery & Equipment.....	.00207	.00412	.00386	.00462	.00468	.00757	.01102	1.06435	.01007	.00710
49. General Industrial Machinery & Equipment.....	.00507	.01327	.05350	.07079	.07630	.08465	.04181	.07062	1.09197	.01414
50. Machine Shop Products.....	.00954	.00801	.04729	.02497	.01174	.02593	.01027	.00920	.01247	1.12016
51. Office, Computing & Accounting Machines.....	.00170	.00150	.00128	.00159	.00184	.00338	.00105	.00347	.00142	.00158
52. Service Industry Machines.....	.00223	.00191	.00131	.00174	.00189	.00311	.00289	.00616	.01041	.00111
53. Electric Industrial Equipment & Apparatus.....	.00953	.01022	.03176	.01595	.02190	.06424	.03559	.05244	.08671	.01099
54. Household Appliances.....	.00306	.00297	.00111	.00393	.00101	.00105	.00255	.00232	.00157	.00071
55. Electric Lighting & Wiring Equipment.....	.00618	.00431	.00399	.00299	.00316	.00608	.00284	.00329	.00415	.00294
56. Radio, Television & Communication Equipment.....	.00179	.00178	.00339	.00199	.00267	.00274	.00217	.01385	.00574	.00224
57. Electronic Components & Accessories.....	.00230	.00247	.00304	.00175	.00224	.00398	.00232	.00940	.00473	.00157
58. Elec. Electrical Machinery, Equipment & Supplies.....	.00217	.00175	.02394	.01056	.00368	.00448	.00216	.00183	.00286	.00318
59. Motor Vehicles & Equipment.....	.04007	.01268	.05347	.03306	.02878	.01953	.06761	.00988	.01634	.01004
60. Aircraft & Parts.....	.00322	.00240	.02111	.00624	.00406	.00592	.00797	.00721	.02323	.00488
61. Other Transportation Equipment.....	.00181	.00225	.01464	.00424	.00659	.00619	.00166	.00464	.00758	.00405
62. Scientific & Controlling Instruments.....	.00346	.00466	.00392	.00374	.00305	.00359	.00326	.00480	.01105	.00264
63. Optical, Ophthalmic & Photographic Equipment.....	.00114	.00092	.00087	.00094	.00075	.00091	.00076	.00308	.00119	.00077
64. Miscellaneous Manufacturing.....	.00761	.00571	.00421	.00411	.00323	.03742	.00521	.00373	.00322	.00257
65. Transportation & Warehousing.....	.06077	.05860	.05401	.05862	.05405	.05486	.03925	.04952	.05337	.04400
66. Communications: Except Radio & TV Broadcasting.....	.00829	.00877	.00921	.00934	.00936	.01068	.00131	.01608	.01574	.01256
67. Radio & TV Broadcasting.....	.00187	.00222	.00216	.00311	.00216	.00247	.00176	.00206	.00207	.00179
68. Electric, Gas, Water & Sanitary Services.....	.03472	.03235	.02601	.02700	.02699	.02578	.02248	.02518	.02722	.02865
69. Wholesale & Retail Trade.....	.06638	.07249	.06746	.07591	.07012	.08521	.05750	.07604	.08309	.06343
70. Finance & Insurance.....	.02468	.02321	.02246	.02321	.02238	.02560	.02122	.02297	.02202	.02390
71. Real Estate & Rental.....	.02839	.02581	.02479	.02624	.02445	.03168	.03408	.02987	.02760	.03456
72. Hotels; Personal & Repair Services exc. Auto.....	.00568	.00589	.00577	.00540	.00548	.00636	.00568	.00656	.00642	.00618
73. Business Services.....	.00050	.00047	.00688	.00066	.00053	.00044	.00030	.00034	.00042	.00031
74. Research & Development.....	.00431	.00457	.00361	.00457	.00413	.00435	.00331	.00484	.00420	.00429
75. Automobile Repair & Services.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76. Amusements.....	.00132	.00145	.00147	.00166	.00142	.00169	.00129	.00153	.00155	.00132
77. Medical, Educational Services & Nonprofit Organizations.....	.00265	.00258	.00354	.00266	.00259	.00268	.00227	.00258	.00262	.00253
78. Federal Government Enterprises.....	.00486	.00492	.00502	.00638	.00455	.00568	.00405	.00483	.00505	.00473
79. State & Local Government Enterprises.....	.00735	.00694	.00583	.00627	.00594	.00586	.00487	.00567	.00604	.00594
80. Gross Imports of Goods & Services.....	.04372	.05194	.03859	.07393	.02647	.04169	.03817	.05270	.03258	.04440
81. Business Travel, Entertainment & Gifts.....	.01836	.01952	.02088	.01829	.01966	.02466	.01918	.02376	.02383	.01904
82. Office Supplies.....	.00212	.00226	.00231	.00249	.00222	.00267	.00207	.00251	.00254	.00210

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT REQUIREMENTS) (Cont.)
(Producers' prices, 1961 dollars)

Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the head of the column.

	Office, computing and accounting machines	Electric industry machinery	Electric industrial equipment and apparatus	Household appliances	Electric lighting and wiring equipment	Radio, television and communication equipment	Electronic components and accessories	Miscellaneous electrical machinery, equipment and supplies	Motor vehicles and equipment	Aircraft and parts
	51	52	53	54	55	56	57	58	59	60
1. Livestock & Livestock Products.....	.00481	.00490	.00498	.00484	.00397	.00520	.00514	.00437	.00407	.00256
2. Other Agricultural Products.....	.00531	.00633	.00688	.00738	.00499	.00647	.00639	.00577	.00685	.00350
3. Forestry & Fishery Products.....	.00060	.00156	.00082	.00130	.00085	.00114	.00087	.00063	.00079	.00067
4. Agricultural, Forestry & Fishery Services.....	.00064	.00094	.00045	.00055	.00043	.00050	.00050	.00044	.00049	.00028
5. Iron & Ferroalloy Ores Mining.....	.00286	.00985	.00761	.00962	.00177	.00279	.00336	.00644	.01161	.00484
6. Nonferrous Metal Ores Mining.....	.00454	.01269	.01297	.01049	.00154	.00422	.00853	.01781	.00575	.00738
7. Coal Mining.....	.00267	.00667	.00504	.00499	.00493	.00285	.00332	.00465	.00783	.00350
8. Crude Petroleum & Natural Gas.....	.00517	.01029	.00448	.00945	.00790	.00647	.00751	.00865	.00966	.00641
9. Stone and Clay Mining and Quarrying.....	.00092	.00224	.00189	.00225	.00212	.00133	.00192	.00219	.00224	.00128
10. Chemical & Fertilizer Mineral Mining.....	.00045	.00114	.00090	.00122	.00119	.00077	.00114	.00177	.00108	.00051
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	.00780	.01325	.01032	.01210	.00913	.00988	.01037	.00924	.01488	.00493
13. Ordnance & Accessories.....	.00170	.00145	.00207	.00144	.00050	.00207	.00772	.00079	.00140	.00402
14. Food & Kindred Products.....	.01337	.01702	.01352	.01148	.01012	.01382	.01321	.01095	.00842	.00612
15. Tobacco Manufactures.....	.00089	.00066	.00082	.00062	.00096	.00084	.00079	.00062	.00042	.00034
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00283	.00511	.00381	.01008	.00370	.00502	.00376	.00653	.01746	.00347
17. Miscellaneous Textile Goods & Floor Coverings.....	.00175	.00292	.00211	.00492	.00251	.00235	.00171	.00542	.01188	.00239
18. Apparel.....	.00169	.00211	.00197	.00211	.00193	.00199	.00238	.00210	.00190	.00194
19. Miscellaneous Fabricated Textile Products.....	.00047	.00091	.00059	.00084	.00060	.00060	.00060	.00098	.01002	.00045
20. Lumber & Wood Products, Except Containers.....	.00442	.01441	.00651	.01167	.00706	.00988	.00682	.00426	.00672	.00594
21. Wooden Containers.....	.00057	.00624	.00632	.00650	.00047	.00080	.00048	.00033	.00044	.00026
22. Household Furniture.....	.00061	.00181	.00058	.00089	.00033	.00033	.00070	.00039	.00056	.00089
23. Other Furniture & Fixtures.....	.00025	.00113	.00017	.00089	.00012	.00012	.00017	.00012	.00045	.00200
24. Paper & Allied Products, Except Containers.....	.01952	.02422	.02320	.02610	.02449	.02302	.02336	.01776	.02047	.00875
25. Paperboard Containers & Boxes.....	.00510	.01581	.00852	.01684	.02452	.01213	.01288	.01233	.00754	.00408
26. Printing & Publishing.....	.01911	.01635	.01322	.03788	.01255	.01771	.01222	.01549	.02040	.00910
27. Chemicals & Selected Chemical Products.....	.01125	.03044	.02361	.03201	.03302	.02104	.03259	.05128	.02765	.01305
28. Plastics & Synthetic Materials.....	.00657	.01136	.00657	.01655	.02621	.01549	.01397	.02089	.01625	.00637
29. Drugs, Cleaning & Toilet Preparations.....	.00149	.00297	.00200	.00266	.00225	.00205	.00187	.00230	.00339	.00176
30. Paints & Allied Products.....	.00216	.00875	.00490	.00901	.00648	.00243	.00233	.00201	.00778	.00239
31. Petroleum Refining & Related Industries.....	.00829	.01658	.01347	.01470	.01243	.01036	.01138	.01356	.01549	.01013
32. Rubber & Miscellaneous Plastics Products.....	.01649	.02536	.01473	.04868	.02458	.01951	.01348	.05915	.05259	.01483
33. Leather Tanning & Industrial Leather Products.....	.00028	.00047	.00031	.00096	.00038	.00044	.00023	.00031	.00069	.00019
34. Footwear & Other Leather Products.....	.00025	.00041	.00026	.00193	.00029	.00029	.00026	.00029	.00030	.00021
35. Glass & Glass Products.....	.00326	.00627	.00409	.00430	.03331	.01497	.03853	.00474	.01761	.00223
36. Stone & Clay Products.....	.00675	.01669	.01591	.01754	.01438	.00994	.01348	.01738	.01366	.01049
37. Primary Iron & Steel Manufacturing.....	.04853	.17005	.11307	.16784	.11460	.04515	.05306	.07887	.20881	.08340
38. Primary Nonferrous Metal Manufacturing.....	.04829	.13437	.13004	.10967	.10277	.06624	.09114	.18049	.05587	.07879
39. Metal Containers.....	.00072	.00152	.00108	.00162	.00124	.00096	.00102	.00112	.00130	.00071
40. Heating, Plumbing & Structural Metal Products.....	.00145	.03286	.00537	.02186	.00422	.00250	.00212	.00238	.00496	.00303
41. Stampings, Screw Machine Products & Bolts.....	.01577	.03099	.02263	.08567	.03167	.02864	.02874	.03254	.05008	.03039
42. Other Fabricated Metal Products.....	.01205	.04706	.01849	.05047	.02617	.02401	.02258	.01646	.06342	.02208
43. Engines & Turbines.....	.00106	.00485	.01856	.02039	.00126	.00110	.00108	.00266	.00693	.00290
44. Farm Machinery & Equipment.....	.00057	.00166	.00122	.00152	.00098	.00061	.00052	.00151	.00309	.00082
45. Construction, Mining & Oil Field Machinery.....	.00082	.00282	.00332	.00218	.00163	.00113	.00152	.00319	.00276	.00148
46. Materials Handling Machinery & Equipment.....	.00028	.00178	.00084	.00056	.00031	.00027	.00026	.00050	.00077	.00089
47. Metalworking Machinery & Equipment.....	.01362	.01229	.01855	.01616	.01049	.01060	.01031	.02092	.02319	.03076
48. Special Industry Machinery & Equipment.....	.00634	.00546	.00250	.00203	.00127	.00150	.00142	.00170	.00218	.00193
49. General Industrial Machinery & Equipment.....	.01035	.02652	.01350	.01870	.00505	.00414	.00361	.02412	.01385	.01910
50. Machine Shop Products.....	.00492	.00609	.00619	.00569	.00495	.00562	.00400	.01340	.01618	.02194
51. Office, Computing & Accounting Machines.....	1.10730	.00207	.00260	.00423	.00128	.00480	.00646	.00269	.00203	.00233
52. Service Industry Machines.....	.00025	1.05833	.00101	.03545	.00123	.00149	.00055	.00095	.00305	.00154
53. Electric Industrial Equipment & Apparatus.....	.03165	.11705	.08810	.06081	.03966	.02978	.03558	.03386	.00494	.01203
54. Household Appliances.....	.00053	.00794	.00131	1.01418	.00103	.00118	.00119	.00339	.00099	.00368
55. Electric Lighting & Wiring Equipment.....	.00663	.01284	.02138	.01256	1.04628	.01741	.01116	.04533	.00971	.00463
56. Radio, Television & Communication Equipment.....	.01474	.00772	.01481	.00316	.00480	1.09592	.04188	.00887	.00953	.04459
57. Electronic Components & Accessories.....	.05421	.00678	.03772	.00458	.00889	.21957	1.07682	.02283	.00484	.01898
58. Misc. Electrical Machinery, Equipment & Supplies.....	.00124	.00244	.00449	.00203	.03651	.00194	.00187	1.04893	.02406	.00611
59. Motor Vehicles & Equipment.....	.00339	.02877	.00782	.01074	.00577	.00439	.00396	.04836	1.44513	.01498
60. Aircraft & Parts.....	.00805	.01200	.00366	.00323	.00126	.01841	.00378	.00250	.00336	1.22242
61. Other Transportation Equipment.....	.00093	.00297	.00612	.00366	.00120	.00132	.00105	.00145	.00324	.00147
62. Scientific & Controlling Instruments.....	.00503	.02509	.01586	.03901	.00494	.00993	.00722	.00714	.00932	.02710
63. Optical, Ophthalmic & Photographic Equipment.....	.00098	.00132	.00171	.00393	.00087	.00382	.00119	.00142	.00111	.00331
64. Miscellaneous Manufacturing.....	.00424	.00559	.00349	.00600	.00088	.00541	.00424	.00393	.00489	.00486
65. Transportation & Warehousing.....	.03982	.06377	.05250	.06330	.04904	.04944	.04602	.05200	.06912	.03581
66. Communications, Except Radio & TV Broadcasting.....	.00942	.01173	.00993	.01430	.00808	.00968	.00809	.00960	.01002	.00988
67. Radio & TV Broadcasting.....	.00285	.00281	.00196	.00813	.00212	.00297	.00191	.00286	.00388	.00124
68. Electric, Gas, Water & Sanitary Services.....	.01591	.03122	.02731	.03234	.02578	.01980	.02687	.02825	.03030	.02118
69. Wholesale & Retail Trade.....	.07808	.10757	.06804	.09121	.09404	.08027	.08817	.07452	.08268	.04983
70. Finance & Insurance.....	.01721	.02916	.01882	.02251	.01860	.01771	.01803	.01947	.02253	.01450
71. Real Estate & Rental.....	.02530	.04036	.02734	.03379	.02893	.02936	.04093	.02840	.02671	.02131
72. Hotels, Personal & Repair Services exc. Auto.....	.00754	.00695	.00760	.00699	.00605	.00790	.00811	.00657	.00511	.00310
73. Business Services.....	.04627	.04543	.03173	.13190	.03429	.03087	.03087	.04629	.06294	.02014
74. Research & Development.....	.00021	.00045	.00047	.00042	.00040	.00084	.00121	.00045	.00127	.00153
75. Automobile Repair & Services.....	.00301	.00566	.00371	.00477	.00361	.00347	.00316	.00383	.00453	.00239
76. Amusements.....	.00197	.00187	.00172	.00326	.00150	.00203	.00172	.00176	.00184	.00090
77. Medical, Educational Services & Nonprofit Organizations.....	.00212	.00310	.00266	.00302	.00250	.00281	.00266	.00264	.00330	.00250
78. Federal Government Enterprises.....	.00560	.00656	.00661	.00987	.00563	.00760	.00770	.00691	.00763	.00399
79. State & Local Government Enterprises.....	.00393	.00713	.00994	.00977	.00977	.00481	.00585	.00616	.00698	.00451
80. Gross Imports of Goods & Services.....	.04905	.03985	.04226	.03417	.03445	.04175	.03194	.05091	.04822	.03101
81. Business Travel, Entertainment & Gifts.....	.03300	.02549	.03211	.02407	.02164	.03270	.03069	.02427	.01632	.01332
82. Office Supplies.....	.00295	.00282	.00278	.00343	.00217	.00298	.00269	.00246	.00242	.00208

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)

[Producers' prices, 1961 dollars]

	Other transportation equipment	Scientific and controlling instruments	Optical, photographic and photographic equipment	Miscellaneous manufacturing	Transportation and warehousing	Communications, except radio and TV broadcasting	Radio and TV broadcasting	Electric, gas, water and sanitary services	Wholesale and retail trade	Finance and insurance
	61	62	63	64	65	66	67	68	69	70
Livestock & Livestock Products.....	.000425	.000675	.000376	.000669	.000395	.000162	.000528	.000252	.000651	.000493
Other Agricultural Products.....	.000600	.000923	.000523	.001247	.000665	.000296	.000577	.000743	.000886	.000900
Fur and Fishery Products.....	.000403	.000082	.000094	.000396	.000352	.000025	.000041	.000047	.000037	.000037
Agricultural, Forestry & Fishery Services.....	.000059	.000063	.000040	.000086	.000043	.000018	.000053	.000042	.000192	.000052
Iron & Ferrous Alloy Ores Mining.....	.001191	.000378	.000180	.000351	.000074	.000023	.000026	.000071	.000034	.000020
Nonferrous Metal Ores Mining.....	.000587	.000882	.000533	.000811	.000087	.000065	.000044	.000089	.000038	.000024
Coal Mining.....	.000763	.000319	.000418	.000394	.000264	.000071	.000092	.000433	.000184	.000139
Crude Petroleum & Natural Gas.....	.001013	.000656	.000892	.000948	.000801	.000304	.000384	.000853	.000870	.000543
Stone and Clay Mining and Quarrying.....	.000243	.000132	.000226	.000146	.000106	.000048	.000042	.000124	.000062	.000042
Chemical & Fertilizer Mineral Mining.....	.000092	.000076	.000280	.000159	.000040	.000013	.000019	.000033	.000027	.000021
New Construction.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maintenance & Repair Construction.....	.001056	.000876	.000816	.001331	.001547	.003390	.002022	.007480	.001934	.001853
Ordnance & Accessories.....	.000068	.002940	.000171	.000045	.000033	.000036	.000065	.000008	.000022	.000008
Food & Kindred Products.....	.000981	.001783	.000919	.001352	.000843	.000324	.001051	.000453	.001545	.000836
Tobacco Manufactures.....	.000052	.000086	.000046	.000069	.000023	.000019	.000067	.000022	.000057	.000049
Broad & Narrow Fabrics, Yarn & Thread Mills.....	.000564	.001755	.000400	.000370	.000235	.000117	.000288	.000099	.000199	.000224
Miscellaneous Textile Goods & Floor Coverings.....	.000325	.000472	.000202	.001222	.000203	.000090	.000221	.000065	.000116	.000183
Apparel.....	.000223	.000390	.000151	.000271	.000046	.000013	.000031	.000025	.000091	.000026
Miscellaneous Fabricated Textile Products.....	.001122	.000113	.000085	.000209	.000092	.000076	.000223	.000026	.000088	.000176
Lumber & Wood Products, Except Containers.....	.000099	.000606	.000716	.000433	.000410	.000221	.000288	.000429	.000386	.000269
Wooden Containers.....	.000055	.000064	.000033	.000084	.000065	.000066	.000012	.000014	.000104	.000012
Household Furniture.....	.000831	.000140	.000021	.000061	.000017	.000026	.000045	.000007	.000021	.000006
Other Furniture & Fixtures.....	.000415	.000399	.000013	.000100	.000014	.000006	.000007	.000010	.000019	.000006
Paper & Allied Products, Except Containers.....	.001307	.002158	.000421	.001055	.000793	.000767	.001573	.000712	.001560	.001780
Paperboard Containers & Boxes.....	.000489	.001302	.001192	.000488	.000193	.000096	.000321	.000127	.000547	.000254
Printing & Publishing.....	.001245	.001396	.002335	.002330	.001353	.002351	.002632	.001113	.002284	.003920
Chemicals & Selected Chemical Products.....	.002377	.002016	.000870	.004459	.001040	.000340	.000475	.000929	.000690	.000504
Plastics & Synthetic Materials.....	.001479	.001103	.000691	.003828	.000369	.000128	.000213	.000190	.000195	.000176
Cleaning & Toilet Preparations.....	.002277	.000388	.000222	.000508	.001132	.000048	.000085	.000078	.000221	.000136
Drugs & Allied Products.....	.001095	.000226	.000145	.000963	.000454	.000188	.000131	.000416	.000155	.000117
Petroleum Refining & Related Industries.....	.001670	.001044	.001519	.001575	.000536	.000454	.000562	.002409	.001284	.000877
Rubber & Miscellaneous Plastics Products.....	.001751	.002030	.001285	.004318	.001199	.000209	.000318	.000352	.000510	.000429
Leather Tanning & Industrial Leather Products.....	.000078	.000140	.000023	.000953	.000021	.000005	.000027	.000006	.000015	.000008
Footwear & Other Leather Products.....	.000023	.000134	.000072	.000707	.000012	.000010	.000071	.000009	.000035	.000019
Glass & Glass Products.....	.000759	.000698	.001347	.000755	.000150	.000061	.000096	.000077	.000204	.000056
Stone & Clay Products.....	.001787	.000958	.002142	.000717	.000361	.000181	.000155	.000563	.000308	.000134
Primary Iron & Steel Manufacturing.....	.002151	.000193	.002176	.000577	.001193	.000394	.000394	.001137	.000516	.000275
Primary Nonferrous Metal Manufacturing.....	.000773	.000469	.000298	.000509	.000849	.000685	.000437	.000671	.000351	.000216
Metal Containers.....	.001127	.000351	.000120	.000164	.000093	.000025	.000059	.000059	.000074	.000041
Heating, Plumbing & Structural Metal Products.....	.001171	.000344	.000109	.000211	.000338	.000179	.000117	.000406	.000211	.000106
Stampings, Screw Machine Products & Bolts.....	.001321	.002486	.000852	.001646	.000210	.000012	.000130	.000135	.000140	.000053
Other Fabricated Metal Products.....	.002636	.002636	.001479	.002484	.000506	.000161	.000188	.001280	.000279	.000137
Engines & Turbines.....	.001008	.000158	.000086	.000076	.000307	.000020	.000037	.000067	.000056	.000038
Farm Machinery & Equipment.....	.000774	.000106	.000066	.000094	.000045	.000020	.000046	.000036	.000069	.000046
Construction, Mining & Oil Field Machinery.....	.000893	.000181	.000106	.000094	.000070	.000020	.000024	.000219	.000062	.000024
Materials Handling Machinery & Equipment.....	.000558	.000036	.000025	.000027	.000067	.000006	.000006	.000034	.000022	.000007
Metalworking Machinery & Equipment.....	.001204	.001867	.000667	.000379	.000187	.000043	.000062	.000117	.000080	.000040
Special Industry Machinery & Equipment.....	.000219	.000327	.000268	.000213	.000041	.000020	.000031	.000041	.000069	.000033
General Industrial Machinery & Equipment.....	.002577	.001068	.000179	.000315	.000194	.000034	.000043	.000175	.000095	.000038
Machine Shop Products.....	.001015	.001474	.000195	.000471	.000156	.000028	.000039	.000055	.000083	.000031
Office, Computing & Accounting Machines.....	.001116	.001676	.000332	.000519	.000103	.000077	.000178	.000139	.000239	.000182
Service Industry Machines.....	.000395	.000255	.000055	.000090	.000044	.000021	.000034	.000034	.000079	.000034
Electric Industrial Equipment & Apparatus.....	.001150	.004393	.001820	.000896	.000260	.000097	.000130	.000229	.000114	.000054
Household Appliances.....	.000611	.001175	.000042	.000242	.000040	.000021	.000032	.000038	.000057	.000023
Electric Lighting & Wiring Equipment.....	.000993	.000605	.000576	.000491	.000132	.000068	.000080	.000115	.000072	.000036
Radio, Television & Communication Equipment.....	.000362	.001801	.000547	.000429	.000164	.001543	.002788	.000083	.000186	.000076
Electronic Components & Accessories.....	.000200	.000429	.000270	.000403	.000163	.000396	.000591	.000057	.000094	.000046
Misc. Electrical Machinery, Equipment & Supplies.....	.000356	.000270	.000390	.000122	.000355	.000074	.000028	.000049	.000107	.000040
Motor Vehicles & Equipment.....	.002791	.002615	.000296	.000468	.001125	.000089	.000110	.000263	.000612	.000173
Aircraft & Parts.....	.000648	.000204	.000196	.000201	.000603	.000042	.000074	.000046	.000116	.000037
Other Transportation Equipment.....	1.00456	.000289	.001130	.000293	.001192	.000084	.000048	.000096	.000059	.000096
Scientific & Controlling Instruments.....	.000413	1.00250	.001356	.000280	.000169	.000035	.000057	.000047	.000098	.000038
Optical, Ophthalmic & Photographic Equipment.....	.000082	.000728	1.05478	.000097	.000048	.000045	.000196	.000041	.000126	.000084
Miscellaneous Manufacturing.....	.000591	.000923	.000426	1.06793	.000340	.000258	.001190	.000207	.000342	.000361
Transportation & Warehousing.....	.002770	.004700	.004389	.005445	1.00395	.001057	.002104	.004493	.002391	.002882
Communications: Except Radio & TV Broadcasting.....	.000904	.001023	.000880	.001179	.001228	1.001098	.004284	.000643	.001480	.002127
Radio & TV Broadcasting.....	.000198	.000229	.000489	.000302	.000193	.000156	1.006556	.000183	.000410	.000362
Electric, Gas, Water & Sanitary Services.....	.002886	.002056	.001950	.002483	.001731	.001143	.001341	1.256688	.00352	.001324
Wholesale & Retail Trade.....	.000934	.000719	.000680	.001043	.000467	.001426	.002811	.003347	1.030774	.002321
Finance & Insurance.....	.002161	.001936	.001880	.002599	.000802	.001110	.002515	.001848	.002987	1.251164
Real Estate & Rental.....	.002552	.002889	.003137	.003817	.005141	.002367	.007490	.003028	.006499	.003644
Hotels, Personal & Repair Services exc. Auto.....	.000623	.000797	.000520	.000672	.000208	.000150	.000494	.000198	.000635	.000384
Business Services.....	.003205	.003709	.002925	.004885	.003120	.002526	.002621	.002963	.006638	.005836
Research & Development.....	.000060	.000032	.000171	.000039	.000012	.000004	.000006	.000008	.000006	.000006
Automobile Repair & Services.....	.000507	.000339	.000367	.000555	.002974	.000268	.000290	.000430	.001135	.000581
Amusements.....	.000144	.000186	.000212	.000181	.000206	.000115	.002780	.000089	.000327	.000210
Medical, Educational Services & Nonprofit Organizations.....	.000281	.000256	.000235	.000268	.000193	.000140	.000200	.000179	.000185	.000728
Federal Government Enterprises.....	.000481	.000515	.000670	.000670	.000484	.000625	.004338	.002311	.001378	.001839
State & Local Government Enterprises.....	.000662	.000469	.000450	.000601	.002965	.002558	.003328	.002627	.000970	.000675
Gross Imports of Goods & Services.....	.004447	.004597	.007152	.001033	.005279	.001000	.001187	.001792	.000816	.001166
Business Travel, Entertainment & Gifts.....	.002021	.003559	.001794	.002194	.000886	.000723	.002608	.000797	.002042	.001885
Office Supplies.....	.002440	.000301	.000242	.000283	.000259	.000472	.000274	.000292	.000373	.000728

TABLE C-35.—UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)
[Producers' prices, 1961 dollars]

	Real estate and rental	Hotels, personal and repair services except auto	Business services	Research and development	Automobile repair and services	Amusements	Medical, educational services and nonprofit organizations	Federal Government enterprises	State and local government enterprises	Gross imports of goods and services
	71	72	73	74	75	76	77	78	79	80
1. Livestock & Livestock Products.....	0.02087	0.00540	0.00924	0.00494	0.00367	0.00693	0.06770	0.03290	0.00221	-----
2. Other Agricultural Products.....	0.02868	0.00878	0.01240	0.00573	0.00540	0.00630	0.07749	0.24292	0.00343	-----
3. Forestry & Fishery Products.....	0.00072	0.00076	0.00088	0.00077	0.00046	0.00041	0.00054	0.00068	0.00103	-----
4. Agricultural, Forestry & Fishery Services.....	0.00190	0.00057	0.00070	0.00043	0.00046	0.00110	0.00053	0.01014	0.00039	-----
5. Iron & Ferrous Alloy Ores Mining.....	0.00051	0.00067	0.00058	0.00424	0.00238	0.00027	0.00037	0.00109	0.00101	-----
6. Nonferrous Metal Ores Mining.....	0.00063	0.00107	0.00082	0.00718	0.00185	0.00043	0.00051	0.00063	0.00119	-----
7. Coal Mining.....	0.00118	0.00211	0.00355	0.00352	0.00460	0.00102	0.00149	0.01356	0.02118	-----
8. Crude Petroleum & Natural Gas.....	0.01000	0.01208	0.00793	0.00922	0.00871	0.00402	0.00648	0.01453	0.02270	-----
9. Stone and Clay Mining and Quarrying.....	0.00149	0.00095	0.00070	0.00135	0.00151	0.00055	0.00049	0.00186	0.00298	-----
10. Chemical & Fertilizer Mineral Mining.....	0.00040	0.00061	0.00059	0.00124	0.00068	0.00020	0.00038	0.00110	0.00059	-----
11. New Construction.....	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
12. Maintenance & Repair Construction.....	0.00589	0.01431	0.01390	0.01323	0.02556	0.03946	0.03851	0.02702	0.24715	-----
13. Ordnance & Accessories.....	0.00009	0.00048	0.00029	0.23966	0.00037	0.00008	0.00088	0.00025	0.00010	-----
14. Food & Kindred Products.....	0.00695	0.01052	0.01003	0.01281	0.00654	0.00930	0.01927	0.03323	0.04550	-----
15. Tobacco Manufactures.....	0.00018	0.00048	0.00054	0.00062	0.00031	0.00056	0.00060	0.00043	0.00020	-----
16. Broad & Narrow Fabrics, Yarn & Thread Mills.....	0.00181	0.02093	0.00342	0.00988	0.00746	0.00256	0.00372	0.00265	0.00135	-----
17. Miscellaneous Textile Goods & Floor Coverings.....	0.00070	0.00541	0.00246	0.00388	0.00738	0.00173	0.00234	0.00176	0.00131	-----
18. Apparel.....	0.00059	0.00948	0.00044	0.00218	0.00092	0.00028	0.00214	0.00039	0.00062	-----
19. Miscellaneous Fabricated Textile Products.....	0.00039	0.01218	0.00163	0.00157	0.00396	0.00157	0.00202	0.00178	0.00034	-----
20. Lumber & Wood Products, Except Containers.....	0.00456	0.00508	0.00775	0.00590	0.00370	0.00296	0.00338	0.00451	0.01001	-----
21. Wooden Containers.....	0.00024	0.00028	0.00025	0.00065	0.00031	0.00012	0.00016	0.00126	0.00018	-----
22. Household Furniture.....	0.00011	0.00127	0.00015	0.00187	0.00022	0.00006	0.00010	0.00010	0.00010	-----
23. Other Furniture & Fixtures.....	0.00013	0.00038	0.00018	0.00090	0.00016	0.00008	0.00013	0.00009	0.00026	-----
24. Paper & Allied Products, Except Containers.....	0.00043	0.02492	0.06466	0.01628	0.01121	0.00965	0.01595	0.02253	0.00982	-----
25. Paperboard Containers & Boxes.....	0.00131	0.00608	0.00546	0.00721	0.00445	0.00219	0.00367	0.00452	0.00177	-----
26. Printing & Publishing.....	0.01118	0.01612	0.26401	0.01607	0.01633	0.02288	0.03050	0.03102	0.01539	-----
27. Chemicals & Selected Chemical Products.....	0.00891	0.02364	0.01477	0.03694	0.01794	0.00508	0.01079	0.02345	0.01735	-----
28. Plastics & Synthetic Materials.....	0.00237	0.00724	0.00350	0.01115	0.01160	0.00205	0.00259	0.00292	0.00368	-----
29. Drugs, Cleaning & Toilet Preparations.....	0.00152	0.01706	0.00242	0.00854	0.00280	0.00099	0.02698	0.00125	0.00155	-----
30. Paints & Allied Products.....	0.00526	0.00156	0.00126	0.00276	0.01039	0.00213	0.00231	0.00218	0.01298	-----
31. Petroleum Refining & Related Industries.....	0.01321	0.01949	0.01168	0.01538	0.01204	0.00540	0.00887	0.02882	0.02102	-----
32. Rubber & Miscellaneous Plastics Products.....	0.00289	0.01149	0.00752	0.02469	0.04689	0.00295	0.00554	0.00742	0.00471	-----
33. Leather Tanning & Industrial Leather Products.....	0.00007	0.00050	0.00022	0.00021	0.00021	0.00079	0.00014	0.00018	0.00007	-----
34. Footwear & Other Leather Products.....	0.00011	0.00099	0.00031	0.00038	0.00022	0.00262	0.00031	0.00043	0.00008	-----
35. Glass & Glass Products.....	0.00102	0.00264	0.00101	0.00564	0.01588	0.00076	0.00181	0.00129	0.00178	-----
36. Stone & Clay Products.....	0.00480	0.00729	0.00233	0.00949	0.01115	0.00205	0.00246	0.00683	0.01098	-----
37. Primary Iron & Steel Manufacturing.....	0.00702	0.00932	0.00647	0.06467	0.04067	0.00412	0.00547	0.00806	0.01613	-----
38. Primary Nonferrous Metal Manufacturing.....	0.00507	0.00988	0.00779	0.07502	0.01771	0.00418	0.00455	0.00493	0.01135	-----
39. Metal Containers.....	0.00069	0.00100	0.00059	0.00141	0.00103	0.00045	0.00124	0.00149	0.00106	-----
40. Heating, Plumbing & Structural Metal Products.....	0.00506	0.00135	0.00115	0.00610	0.00240	0.00189	0.00214	0.00173	0.01238	-----
41. Stampings, Screw Machine Products & Bolts.....	0.00097	0.00272	0.00201	0.00247	0.00894	0.00082	0.00193	0.00149	0.00178	-----
42. Other Fabricated Metal Products.....	0.00201	0.00658	0.00383	0.02337	0.00225	0.00164	0.00235	0.00472	0.00864	-----
43. Engines & Turbines.....	0.00039	0.00045	0.00442	0.01093	0.00143	0.00037	0.00037	0.00107	0.00043	-----
44. Farm Machinery & Equipment.....	0.00060	0.00045	0.00626	0.00277	0.00082	0.00046	0.00038	0.00258	0.00031	-----
45. Construction, Mining & Oil Field Machinery.....	0.00061	0.00043	0.00134	0.00248	0.00096	0.00026	0.00032	0.00097	0.00155	-----
46. Materials Handling Machinery & Equipment.....	0.00020	0.00012	0.00014	0.00113	0.00026	0.00007	0.00010	0.00030	0.00037	-----
47. Metalworking Machinery & Equipment.....	0.00110	0.00123	0.00202	0.03561	0.00506	0.00043	0.00076	0.00108	0.00104	-----
48. Special Industry Machinery & Equipment.....	0.00048	0.00090	0.00148	0.00305	0.00090	0.00028	0.00049	0.00060	0.00050	-----
49. General Industrial Machinery & Equipment.....	0.00085	0.00104	0.00141	0.01276	0.00325	0.00040	0.00063	0.00114	0.00137	-----
50. Machine Shop Products.....	0.00093	0.00067	0.00099	0.01153	0.01953	0.00030	0.00057	0.00125	0.00086	-----
51. Office, Computing & Accounting Machines.....	0.00100	0.00149	0.02666	0.00929	0.00143	0.00170	0.00155	0.00133	0.00089	-----
52. Service Industry Machines.....	0.00060	0.00392	0.00430	0.00461	0.00077	0.00038	0.00037	0.00036	0.00063	-----
53. Electric Industrial Equipment & Apparatus.....	0.00132	0.00346	0.00245	0.05039	0.00389	0.00082	0.00139	0.00128	0.00248	-----
54. Household Appliances.....	0.00067	0.00928	0.00064	0.02824	0.00048	0.00035	0.00045	0.00031	0.00095	-----
55. Electric Lighting & Wiring Equipment.....	0.00105	0.00179	0.00084	0.02130	0.00693	0.00056	0.00071	0.00086	0.00251	-----
56. Radio, Television & Communication Equipment.....	0.00079	0.00269	0.00325	0.01018	0.00219	0.00070	0.00161	0.00092	0.00089	-----
57. Electronic Components & Accessories.....	0.00079	0.00206	0.00233	0.09375	0.00159	0.00047	0.00120	0.00073	0.00055	-----
58. Misc. Electrical Machinery, Equipment & Supplies.....	0.00040	0.00095	0.00084	0.00878	0.00117	0.00025	0.00088	0.00172	0.00075	-----
59. Motor Vehicles & Equipment.....	0.00200	0.00367	0.00332	0.09512	0.20406	0.00088	0.00194	0.01030	0.00521	-----
60. Aircraft & Parts.....	0.00061	0.00078	0.00118	0.39174	0.00116	0.00032	0.00161	0.00180	0.00045	-----
61. Other Transportation Equipment.....	0.00057	0.00150	0.00159	0.00374	0.00243	0.00068	0.00147	0.00303	0.00074	-----
62. Scientific & Controlling Instruments.....	0.00063	0.00777	0.00084	0.05023	0.00436	0.00042	0.01319	0.00073	0.00079	-----
63. Optical, Ophthalmic & Photographic Equipment.....	0.00053	0.00078	0.00085	0.00900	0.00073	0.00628	0.00401	0.00072	0.00048	-----
64. Miscellaneous Manufacturing.....	0.00173	0.02662	0.01490	0.00672	0.00272	0.02245	0.00393	0.00309	0.00305	-----
65. Transportation & Warehousing.....	0.01990	0.02930	0.03617	0.04189	0.03498	0.02169	0.02469	0.25145	0.03491	-----
66. Communications, Except Radio & TV Broadcasting.....	0.00670	0.00988	0.03920	0.01026	0.01277	0.01068	0.01172	0.01006	0.00849	-----
67. Radio & TV Broadcasting.....	0.00215	0.00295	0.04491	0.00234	0.00285	0.00377	0.00266	0.00278	0.00172	-----
68. Electric, Gas, Water & Sanitary Services.....	0.01141	0.03604	0.02481	0.02297	0.03924	0.01744	0.02850	0.03597	0.11314	-----
69. Wholesale & Retail Trade.....	0.03409	0.06399	0.04318	0.05890	0.11044	0.02919	0.03434	0.05394	0.04110	-----
70. Finance & Insurance.....	0.04950	0.03180	0.02912	0.01934	0.04658	0.04420	0.02363	0.02163	0.02041	-----
71. Real Estate & Rental.....	1.03594	0.06617	0.06612	0.03981	0.06151	0.07725	0.08202	0.05557	0.02942	-----
72. Hotels, Personal & Repair Services exc. Auto.....	0.00493	1.03183	0.00910	0.06003	0.00314	0.00423	0.00886	0.00340	0.00323	-----
73. Business Services.....	0.03112	0.04767	1.05421	0.07893	0.04606	0.06102	0.04285	0.04498	0.02776	-----
74. Research & Development.....	0.00006	0.00016	0.00014	1.00108	0.00029	0.00005	0.06188	0.00053	0.00010	-----
75. Automobile Repair & Services.....	0.00368	0.01260	0.00810	0.00218	1.02066	0.00185	0.00419	0.02009	0.00359	-----
76. Amusements.....	0.00257	0.00159	0.01884	0.00324	0.00145	1.29824	0.00639	0.00167	0.00085	-----
77. Medical, Educational Services & Nonprofit Organizations.....	0.00130	0.00207	0.00143	1.77723	0.00243	0.00206	1.01498	0.00141	0.00090	-----
78. Federal Government Enterprises.....	0.00724	0.00474	0.00396	0.00446	0.00559	0.00439	0.00406	1.00610	0.00491	-----
79. State & Local Government Enterprises.....	0.01002	0.00831	0.00549	0.00507	0.00982	0.00401	0.00587	0.01202	1.01613	-----
80. Gross Imports of Goods & Services.....	0.00638	0.01435	0.01820	0.03107	0.01660	0.02825	0.00883	0.06117	0.01023	1.00000
81. Business Travel, Entertainment & Gifts.....	0.00421	0.01836	0.02076	0.02102	0.01165	0.02174	0.02279	0.01655	0.00756	-----
82. Office Supplies.....	0.00142	0.00299	0.01258	0.00766	0.00204	0.00278	0.00493	0.00796	0.00708	-----

TABLE C-35. - UNITED STATES 1961 TOTAL (DIRECT AND INDIRECT) REQUIREMENTS (Cont.)
 [Producers' prices, 1961 dollars]

	Business travel, enter- tainment and gifts	Office supplies
	81	82
Each entry represents the output required, directly and indirectly, from the industry named at the beginning of the row for each dollar of delivery to final demand by the industry named at the head of the column.		
Livestock & Livestock Products.....	.11280	.00694
Other Agricultural Products.....	.08156	.01032
Forestry & Fishery Products.....	.00452	.00491
Agricultural, Forestry & Fishery Services.....	.00564	.00076
Iron & Ferroalloy Ores Mining.....	.00100	.00136
Nonferrous Metal Ores Mining.....	.00099	.00732
Coal Mining.....	.00256	.00547
Crude Petroleum & Natural Gas.....	.01822	.01080
Stone and Clay Mining and Quarrying.....	.00129	.00251
Chemical & Fertilizer Mineral Mining.....	.00086	.00251
New Construction.....	-----	-----
Maintenance & Repair Construction.....	.03163	.01527
Ordinance & Accessories.....	.00120	.00047
Food & Kindred Products.....	.36710	.01597
Tobacco Manufactures.....	.02583	.00069
Broad & Narrow Fabrics, Yarn & Thread Mills.....	.00622	.01280
Miscellaneous Textile Goods & Floor Coverings.....	.00274	.00583
Apparel.....	.00355	.00124
Miscellaneous Fabricated Textile Products.....	.00352	.00228
Lumber & Wood Products, Except Containers.....	.00558	.04656
Wooden Containers.....	.00137	.00068
Household Furniture.....	.00043	.00031
Other Furniture & Fixtures.....	.00017	.00057
Paper & Allied Products, Except Containers.....	.01911	.45185
Paperboard Containers & Boxes.....	.00992	.02537
Printing & Publishing.....	.01862	.68213
Chemicals & Selected Chemical Products.....	.02060	.05707
Plastics & Synthetic Materials.....	.00517	.01553
Drugs, Cleaning & Toilet Preparations.....	.01125	.00356
Paints & Allied Products.....	.00304	.00301
Petroleum Refining & Related Industries.....	.03419	.01806
Rubber & Miscellaneous Plastics Products.....	.01114	.02481
Leather Tanning & Industrial Leather Products.....	.00119	.00161
Footwear & Other Leather Products.....	.00419	.00136
Glass & Glass Products.....	.00907	.00780
Stone & Clay Products.....	.00451	.00570
Primary Iron & Steel Manufacturing.....	.01575	.01869
Primary Nonferrous Metal Manufacturing.....	.00910	.02158
Metal Containers.....	.00978	.00132
Heating, Plumbing & Structural Metal Products.....	.00235	.00142
Stampings, Screw Machine Products & Bolts.....	.00357	.00485
Other Fabricated Metal Products.....	.00637	.01569
Engines & Turbines.....	.00156	.00060
Farm Machinery & Equipment.....	.00120	.00062
Construction, Mining & Oil Field Machinery.....	.00061	.00080
Materials Handling Machinery & Equipment.....	.00036	.00027
Metalworking Machinery & Equipment.....	.00174	.00221
Special Industry Machinery & Equipment.....	.00070	.00450
General Industrial Machinery & Equipment.....	.00157	.00193
Machine Shop Products.....	.00135	.00162
Office, Computing & Accounting Machines.....	.00154	.00831
Service Industry Machines.....	.00113	.00053
Electric Industrial Equipment & Apparatus.....	.00265	.00338
Household Appliances.....	.00579	.00070
Electric Lighting & Wiring Equipment.....	.00143	.00706
Radio, Television & Communication Equipment.....	.00744	.00200
Electronic Components & Accessories.....	.00559	.00169
Misc. Electrical Machinery, Equipment & Supplies.....	.00199	.00069
Motor Vehicles & Equipment.....	.00691	.00274
Aircraft & Parts.....	.00323	.00206
Other Transportation Equipment.....	.00542	.00138
Scientific & Controlling Instruments.....	.00387	.00144
Optical, Ophthalmic & Photographic Equipment.....	.00422	.01161
Miscellaneous Manufacturing.....	.01400	.16951
Transportation & Warehousing.....	.45551	.06122
Communications; Except Radio & TV Broadcasting.....	.01087	.01586
Radio & TV Broadcasting.....	.00294	.00172
Electric, Gas, Water & Sanitary Services.....	.02305	.02704
Wholesale & Retail Trade.....	.11283	.06764
Finance & Insurance.....	.03193	.02537
Real Estate & Rental.....	.05283	.04853
Hotels; Personal & Repair Services exc. Auto.....	.16192	.00681
Business Services.....	.04755	.06032
Research & Development.....	.00019	.00036
Automobile Repair & Services.....	.01781	.00519
Amusements.....	.02945	.00208
Medical, Educational Services & Nonprofit Organizations.....	.00635	.00261
Federal Government Enterprises.....	.00541	.01017
State & Local Government Enterprises.....	.01578	.00679
Gross Imports of Goods & Services.....	.07176	.07190
Business Travel, Entertainment & Gifts.....	1.01277	.02597
Office Supplies.....	.00252	1.00407

APPENDIX D

ECONOMIC PROJECTIONS: THE STUDY REGIONS, 1980

The Washington State Economic Projections

Economic projections for Washington used in the present study are based on work begun by the late Dr. Charles M. Tiebout for the Economic Development Administration. Input-output analysis was the technique used to make the projections. Briefly, final demands were projected for each industry and then the I-O matrix was solved for outputs of each industry necessary to satisfy projected levels of final demands. Prior to making this calculation, a number of adjustments were made.

Due to technological change and relative price changes, direct input coefficients change over time. All coefficients in the matrix had to be revised, therefore, to fit expected methods of production in 1980. Some of these changes involved substitution of plastics for metals, computing machines for clerical help, electrical energy for coal, and numerous other changes. In addition, coefficients were adjusted to account for "import substitution." The rationale for the latter adjustments is that as an economy grows it tends to become more self-sufficient. Increases in self-sufficiency tend to increase direct input coefficients in a region.

Washington export markets were divided into three regions: (1) foreign, (2) California and Oregon, and (3) rest of the United States. Exports to each region were made a function of economic variables, such as income, industrial output, and related activities. Expected levels of economic activity in each region in 1980 were then used to project Washington export sales.

Basic assumptions underlying the projections were: (1) no major wars, (2) historical changes in labor productivity would continue into the future, and (3) interest rates would remain at their 1963 levels. The first assumption affects the level of Federal defense spending in the state. The

second is important in projecting employment in the state. The last assumption is important in making forest products industry projections. The demand for timber is highly sensitive to changes in the rate of interest, because of the vulnerability of the construction market, the primary source of demand for timber products, to changes in the interest rate.

The employment projections were based on comparisons of extensive value added for each industry between 1963 and 1980. Extensive value added is that portion of value added paid to households, which is not dependent upon productivity increases and reflects what employees in each industry would continue to earn in the absence of changes in productivity.

If in 1963, one-half of total value added generated by an industry was paid to households, it was assumed that one-half of total 1980 value added would also be paid to households. Consider a situation wherein labor productivity in that industry doubles in the seventeen years between 1963 and 1980 (a very rapid growth rate indeed). It would be possible to support a level of output twice as great as that produced in 1963 with a labor force no larger than that employed in 1963. However, payments to households will have doubled.

Since the labor force has not changed and earnings have doubled, it is useful to separate household income into two parts: extensive vis-a-vis intensive income. Extensive income would be that portion which reflected the labor force's 1963 productivity while the increase in income per employee attributable to changes in productivity would be considered intensive income. By this definition, extensive income paid in 1980 indicates, when compared with the extensive income paid in 1963, the number of employees that industry will need to satisfy the 1980 level of output. It is true that myriad other factors influence wage rates and employment, but without a crystal ball, labor productivity change is one of the few variables capable of being projected with any confidence at all.

The Upper Colorado River Basin Economic Projections

The method used to obtain 1980 projections of output, value added, and employment in the three sub-basins of the Upper Colorado River Basin differed slightly from projections made for Washington State. While the basic analysis is generally the same, the method used for obtaining employment projections to 1980 involved "shift and share" analysis. Growth patterns in employment by county from 1940 to 1950, and from 1950 to 1960 were used.^{1/} A region's share of total national employment changes over time. These changes can be determined from historical data and are expected to hold some time into the future.

In the Upper Colorado River Basin, the available labor force was determined and economic projections were then made which were consistent with projections of the labor force.

Direct input coefficients in the I-O tables for each of the three sub-basins were revised to reflect expected changes in technology, relative prices, industry mix, and import substitution (changing self-sufficiency). If the output of an industry is constrained by the supply of a resource, total output of the industry was projected rather than the final demand. For most industries, supply constraints were not binding, hence final demands were projected by making them functions of buyers' income.

The basic underlying assumptions on which the projections were made were: (1) no major wars, (2) historical changes in labor productivity would continue into the future, and (3) interest rates would remain at their 1963 level. The first assumption is crucial to any set of economic projections. An unexpected change in defense expenditures would change the composition of the total national GNP, and would have significant effects upon the demand for any region's output. The second assumption is important to schedule outputs consistent with the projected labor force in the Upper Colorado River Basin. The last assumption is employed to insure that demand conditions are

^{1/} Lowell D. Ashby, Growth Patterns in Employment by County: 1940-1950 and 1950-1960. Vol. VI, Southwest. U. S. Department of Commerce, Office of Business Economics, 1965.

functions of income in any given period. Projections should not be affected by short-term fluctuations in the interest rate.^{2/}

United States Economic Projections

Since the present study was not concerned with evaluating the impact of any public policy changes on the United States economy, the projections of total industrial output in the United States are not crucial. However, they did prove helpful in confirming the expected trend in the relative importance of public land related outputs discussed in Chapter IV.

Because of the peculiar industry definitions required in this study, the usual United States Department of Commerce data were not directly comparable. The United States Department of Commerce's staff working paper No. 16, "Input-Output Transactions: 1961," published in July 1968 was used for adjusting changes in the price level between 1960 and 1963. The 1980 projections were derived by using Clopper Almon's expected growth rates by industry.^{3/} The projections were then aggregated where necessary to obtain 1980 estimates (table IV-2). The 1963 estimates of industrial output, by the same classifications, were obtained by extrapolating 1961 reported figures and the 1980 projections. The latest data available were reported for 1961.

^{2/} Detailed analyses of the projections may be found in An Analysis of the Economy of the Upper Main Stem Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967, Chapter 7; An Analysis of the Economy of the San Juan River Sub-Basin of the Colorado River Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967, Chapter 7; and An Analysis of the Economy of the Green River Sub-Basin of the Colorado Drainage Basin in 1960 with Emphasis on Heavy Water Using Industries, edited by Bernard Udis, University of Colorado, Boulder, Colorado, August 1967, Chapter 7.

^{3/} Almon, Clopper, Jr., The American Economy to 1975: An Interindustry Forecast, Harper and Row, 1966, pp. 126 and 127.

APPENDIX E

ALTERNATIVE PUBLIC LAND RESOURCE USES

A number of alternative land and resource allocations have been identified and analyzed in the present study. Nine of them applied to the Upper Colorado River Basin. Five applied to Washington State.

Upper Colorado River Basin Policy Alternatives

Colorado Policy Alternative A

The Federal government will adopt a policy of substantially increased investment in range land. The increased investment will increase the carrying capacity of all affected range lands by 50 percent. Moreover, the increased capacity will be used by the same proportion of cattle and sheep as was projected for 1980. This policy would apply to all three sub-basins.

Colorado Policy Alternative B

The level of investment in grazing lands under the jurisdiction of the Department of the Interior will be increased. As a result, USDI grazing is assumed to increase by 25 percent over the 1980 projected base. On the other hand, the level of grazing on lands managed by the Department of Agriculture is anticipated to remain at the original 1963 level. This policy would apply to all three sub-basins.

Colorado Alternative C

This alternative assumes the development of a new oil shale industry in the Upper Main Stem Sub-basin. The output of this new industry is assumed to reach 250,000 barrels per day by 1980. With regard to the present study, this is not a policy alternative. Rather, it is simply a development which the Commission staff specified for analysis in the input-output framework.

Colorado Alternative D

Alternative D is similar to the preceding one in that it assumes the development of an oil shale industry where none existed before. However, both the Upper Main Stem and Green River Sub-basins would be involved with assumed 1980 outputs of 1,000,000 and 150,000 barrels per day, respectively.

Colorado Policy Alternative E

This policy would restrict the output of leasable minerals from public lands. Specifically, 25 percent of the projected increase in the output of Other Minerals in the Upper Main Stem and San Juan Sub-basins could not be realized.

Colorado Policy Alternative F

Due to increased investment in big game ranges, the carrying capacity of the three sub-basins would be increased by 30 percent. Because the chance of a successful hunt would be increased, it is further assumed that resident participation in big game hunting would increase by 20 percent over the projected 1980 use, while non-resident big game hunting would increase by ten percent.

Colorado Alternative G

This alternative assumes increased private investment in winter sports facilities in the Upper Main Stem Sub-basin. It is assumed that the result would be increased resident visits to winter sports facilities by five percent and non-resident visits by two percent above the 1980 projected base.

Colorado Policy Alternative H

This policy calls for a decrease in the use of Bureau of Land Management lands in grazing and would devote land removed from grazing to other types of agricultural activity. In the Upper Main Stem, eight percent of grazing district lands would be put into agriculture while in the San Juan and the Green, five percent would be reallocated.

Colorado Alternative I

This alternative assumes the development of a new pulp and paper industry. The assumed 1980 output would be 500 tons per day. In fact, public policy is not involved in this question. Rather, the Commission staff specified this economic development of a new industry for analysis in the present study.

Washington State Policy Alternatives

Washington Policy Alternative A

This policy would result in restricting the public timber cut at the original 1963 levels. Even flow of timber from public lands would be strictly enforced, and the full allowable cut would be sold annually.

Washington Policy Alternative B

Policy B would result in more intensive management of National Forests by the use of improved technology, shorter rotation periods, improved inventory procedures and related activities. The assumed result of this policy is to increase timber cut on National Forests by 20 percent. Moreover, the allowable cut would be increased by ten percent to permit more rapid harvesting of over-mature timber.

Washington Policy Alternative C

This policy would restrict log export sales from National Forests and other Federal public timber lands to 200 million board feet.

Washington Policy Alternative D

This policy calls for reallocation of five percent of public commercial forest land to exclusive recreational use. The allowable public timber cut would fall correspondingly. It is assumed that both out-of-state and in-state recreational visits to public lands would increase five percent over the projected 1980 level.

Washington Policy Alternative E

Policy E calls for a 20 percent reduced yield on five percent of commercial public forests due to scenic easements along public roads. As a result of these scenic easements, in-state driving for pleasure is assumed to increase by two percent. Out-of-state visits to public lands would increase by two percent over the projected 1980 level.

APPENDIX F

A REVIEW OF REGIONAL ECONOMIC STUDIES

Numerous regional economic studies have been made in the past few years in which the techniques in the present investigation have been used. Other studies have been made which cover many of the same resources, as well as geographical areas involved in the present study. To the extent possible, information, insights, and conclusions developed in some of the more relevant of these studies have been incorporated into the present effort.

Previous studies which are at least partially analogous to the present investigation, either in technique or in subject matter, can be placed into one of two rather broad categories: (1) input-output studies of regional economies, (2) traditional economic studies of regional economies, focusing on one or more resources. The latter range from more or less institutional, descriptive studies to relatively formal economic analyses. The latter category also includes a number of regional economic growth studies.

Regional Input-Output Studies

Useful papers in this category include "Measurement of the Impact of Recreation Investments on a Local Economy" by Robert J. Kalter and William B. Lord.^{1/} Kalter and Lord used the interindustry technique to develop empirical estimates of multipliers associated with investments in recreational developments. Particular attention was directed towards the size and distribution of "secondary benefits." Secondary benefits are generally defined in terms of unemployed resources being utilized in government investment projects and the multipliers effects of expenditures of the additional income generated.

^{1/} Journal of Agricultural Economics, Volume 50, May 1968, pp. 243-256.

D. W. Bromley, G. E. Blanch, and H. H. Stoevner in their report "Effects of Selected Changes in Federal Land Use on a Rural Economy,"^{2/} used the interindustry technique to determine the importance of livestock grazing and timber production from Federal land in the economy of Grant County, Oregon. In terms of technique and resources involved, this study has much in common with the present effort. The structure of the Grant County economy, and the magnitude of public land ownership and proposed changes were considerably different than those investigated here. As a result, conclusions of the Bromley et al study, and their data inputs, were not directly compatible with the present study.

Two other studies involving timber resources which might be included in the interindustry class are by W. R. Maki et al and Hays B. Gamble. In the first study,^{3/} the degree of economic dependency on the timber industry was estimated for 15 subregions of Washington, Oregon, and Northern California. Estimation was made using the economic base concept. Excess-employment techniques were used to estimate the economic base.

Dependency, measured as a percent of 1960 base employment in timber-dependent industries, ranged from 6.2 in the Seattle area to 99.4 in the Roseburg, Oregon, area. In the Douglas-fir region 45 percent of the economic base was estimated to be dependent on timber-based employment. Timber dependent industries were lumber, wood products, furniture, other and miscellaneous manufacturing, forestry, and fisheries.

In the second study,^{4/} the importance of producing and exporting goods and services to the survival of a regional

^{2/} Agriculture Experiment Station Bulletin 604, Oregon State University, 1968.

^{3/} Maki, Wilber R., Con H. Schallau and John H. Beuter, "Importance of Timber-Based Employment to the Economic Base of the Douglas-fir Region of Oregon, Washington, and Northern California," Pacific Northwest Forest and Range Experiment Station Research Note 76, U. S. Department of Agriculture, 1968.

^{4/} Gamble, Hays B., "The Regional Economic Role of Forest Products Industries," Journal of Forestry, Volume 66, 1968, pp. 462-466.

economy was noted. Two regions, Clinton and Sullivan Counties in Pennsylvania, were examined to determine the dependence of their economic base on their forest products industries.

In 1963, in Clinton County, direct and indirect income to various sectors resulting from final demand to the forest product firms were tabulated. Retail and household sectors received 65 percent of this income. In Sullivan County, a "very rural" county, sawmilling activity accounted for 19 percent of the export income and had a multiplier of 2.24. Households received about 50 percent of the income resulting from final demand to sawmill firms.

Gamble also noted that input-output models can be used to evaluate the impact of economic changes within the region, such as industry closures or new industry entry. Similar problems are evaluated in the present study. Gamble also raised the issue of economic externalities, and noted that future industry decisions must consider the "intangible impact" they have on a region.

Traditional Economic Studies

Traditional economic analyses involving regional timber resource development are summarized by Albert C. Worrell.^{5/} Worrell summarized four regional timber studies:

1. "Timber Trends in Western Oregon and Western Washington" by the Division of Forest Economics Research.
2. "Toward Complete Use of Eastern Oregon's Forest Resources" by Donald R. Gedney.
3. "The Timber Economy of the Ninth District West" by Clarence W. Nelson.
4. "The Commercial Forest Resources and Forest Products Industries of California" by John A. Zivnuska, Paul Cox, Adon Poli, and David Pesonen.

^{5/} "Regional Economic Studies of Timber Supply," Journal of Forestry, Volume 64, 1966, pp. 91-97.

Worrell's observations are worth noting:^{6/}

"Four recent economic analyses of western forest regions demonstrate different approaches to the problem of estimating future wood yield and forest industry development. These studies are interesting and useful in themselves but are not entirely adequate for the use to which such information might be put. A more complete and better integrated program of regional studies could provide a much needed basis for public and private decision making in forest resource use."

Useful insights are available in all the studies reviewed by Worrell, particularly from the standpoints of formulating prospective policy alternatives and evaluating conclusions of alternative analyses. Nevertheless, information provided in these studies was not immediately relevant to the present analysis.

Other studies related to these topics and which might be useful to the student of public lands and regional economies may find the following studies useful.

1. G. R. Rajender, Floyd K. Harmston, Dwight M. Blood, A Study of the Resources, People and Economy of Teton County. University of Wyoming, 1967.
2. Don A. Seastone, Economic Base Study of Mesa County and Grand Junction. Western Colorado Regional Planning Commission, 1967.
3. Norman P. Swenson, Federal Forestry Policies: Effects on Regional Employment and Income in Southwest Oregon. Economic Development Administration, March 1968.

^{6/} Ibid., p. 91.

APPENDIX G

OUTPUT, INCOME/OUTPUT, AND INCOME MULTIPLIERS

The multiplier is an extremely useful tool in economic research. It is typically used as a reasonably reliable and yet inexpensive means to predict the total change in an economic variable resulting from some specified initial change in another. For instance, what is the total change in output resulting from an increase in the output of airplanes? What is the total change in income resulting from the same change in output? What is the ratio of the total change in income to the initial change in income? The answers to these three questions are found in (a) output multipliers, (b) income/output multipliers, and (c) income multipliers, respectively.

An output multiplier is defined as the ratio of the total change in all industrial output to the initial change in output. These may be easily obtained from the direct and indirect requirements table. That is, the total change in output resulting from some initial change in the output of, say, electrical equipment may be found by adding the direct and indirect requirements coefficients in the electrical equipment column (omitting any coefficients which are derived for the purpose of determining the change in income resulting from the same initial change). The sum will indicate what total dollar increase in output will result from a one dollar increase in the final sales of that industry.

The income/output multiplier is not a commonly used ratio, but is still extremely useful if one wishes to rapidly determine the change in Gross Regional Product associated with a change in final sales of an industry. In the present study, these were obtained by adding, for each industry's column, the row coefficients associated in any way with household or governmental income. For the Upper Colorado River Basin tables, these were the last two rows in each direct and indirect requirements table. For Washington State, these were the last row in the 1963 direct

and indirect requirements table and the last three rows in the 1980 direct and indirect requirements table.

The income multipliers are derived by dividing the total change in income resulting from an increase in final sales by the initial increase in income resulting from the same increase. That is, the income/output multiplier is divided by that industry's value added coefficient which is found in the direct input coefficients table.

These multipliers are included in tables G-1 through G-4. A comparison of the various multipliers between regions and between years affords some interesting insights to economic impact analysis. For example, compare the 1963 Washington output multipliers with the 1980 Washington multipliers. One notices that the 1963 multipliers are not nearly as large as the 1980. The reason is that the 1980 direct and indirect coefficients table was derived to account for long-run impacts rather than moderately short-run adjustments. That is, only consumption was made a function of income in the 1963 table, but government and investment expenditures were also made functions of income in the 1980 table. The larger 1980 coefficients should not be interpreted as indicating inherent growth over time of output multipliers. Such a notion is not founded in economic science, although such growth may take place as the economy develops.

A comparison of the 1980 Upper Colorado River Sub-basin multipliers with the 1980 Washington State multipliers shows that the more complex and self-sufficient an economy, the greater will be the economic impact of an initial change in output. The reasons are explained at length in the main body of the report, but essentially the reasons are two: the industries of Washington are more highly interdependent and Washington buyers import less. As a consequence, a larger portion of the total impact is internalized to the region.

A brief note concerning the occasional extremely high income multipliers. These tend to crop up whenever the initiating industry pays very little in the way of value added per dollar of output but is strongly tied to industries that pay considerably more. The result is a large generation of value added compared to a small initial increase.

OUTPUT, INCOME/OUTPUT AND INCOME MULTIPLIERS, UPPER MAIN STEM, SAN JUAN, AND GREEN RIVER SUB-BASINS, 1963

Row Numbers		Industrial Sector	Output Multiplier		Income/Output Multiplier				Income Multiplier		
1	1	Range Livestock	1.88	1.78		1.11	1.08		2.06	1.74	
2		Feeder Livestock	2.84			1.05			3.50		
3	2	Dairy	1.93	1.04		.95	1.07		2.38	1.95	
4		Food Field Crops	1.83			1.07			1.88		
	3	Field Crops		1.71			1.12			1.58	
5		Truck Crops	2.10			.94			2.69		
6	4	Fruit	2.09	2.20		.97	.90		2.69	2.81	
7	5	Forestry	1.57	1.62	.57	.94	1.05	.87	1.65	1.52	1.55
		Agriculture			.93			.01			1.98
8	6	All Other Agriculture	2.12	1.76		.91	.77		3.03	2.20	
9	7	Coal	1.61	1.61	.55	.97	.82	.81	1.64	1.71	.56
10	8	Oil and Gas	1.54	1.17	.15	.51	.15	.14	2.83	2.14	.80
11	9	Uranium	1.74	1.75		.61	.42		2.35	2.63	
		Uranium, Non-Fuel			.62			.53			2.04
12		Zinc	1.47			.74			1.64		
13	10	All Other Mining	1.65	1.64		1.05	.63		1.64	2.10	
14	11	Food and Kindred	2.24	1.90	.36	.94	.78	.65	3.62	2.79	.38
15	12	Lumber and Wood	2.13	1.97	.15	.96	1.03	.90	3.31	2.29	.21
16	13	Printing and Publishing	1.49	1.51	.52	.77	.71	.78	1.71	1.65	.56
17		Fabricated Metals	1.39			.61			1.79		
18	14	Stone, Clay and Glass	1.86	1.33	.58	.88	.31	.70	2.84	2.21	.79
		Chemicals, Petroleum, Coal			.76			.73			.32
19	15	All Other Manufacturing	1.36	1.45		.58	.34		1.81	2.13	
20	16	Wholesale Trade	1.49	1.66	1.62	.50	.79	.71	2.38	1.80	1.82
21	17	Service Stations	1.82	1.89	1.78	1.22	1.01	.87	1.74	1.83	2.02
22	18	All Other Retail	2.55	1.88	1.72	1.18	1.05	.79	1.93	1.78	1.93
23	19	Eating and Drinking	1.76	1.65	1.71	.71	.66	.55	2.29	2.00	2.50
24	20	Agricultural Services	1.54	1.81		.75	.79		1.79	2.39	
	21	Oil Field Services		1.49	1.07		.46	.89		1.92	1.75
25	22	Lodging	1.76	1.62	1.50	.88	.61	.74	2.05	2.03	4.93
26	23	All Other Services	1.66	1.64	1.64	.89	.86	.53	1.82	1.69	2.21
27	24	Transportation	1.68	1.61	1.81	.72	.62	.90	1.85	1.94	1.84
28	25	Electric Energy	1.75	1.69	1.61	.92	.55	.43	2.24	2.50	3.31
29	26	Other Utilities	1.47	1.66	1.49	.68	.56	.30	1.79	1.75	2.73
30	27	Contract Construction	1.94	2.13	1.51	.70	.63	.43	2.59	3.15	2.05
31	28	Rentals and Finance	1.71	1.73	1.76	1.20	1.01	1.22	1.57	1.63	1.54

☐ UPPER MAIN STEM SUB-BASIN

☐ SAN JUAN SUB-BASIN

☐ GREEN RIVER SUB-BASIN

TABLE G-2

OUTPUT, INCOME/OUTPUT AND INCOME MULTIPLIERS

WASHINGTON STATE, 1963

Industrial Sector	Output Multiplier	Income/Output Multiplier	Income Multiplier
1. Field & Seed Crops	1.87	1.21	2.24
2. Livestock & Products	1.98	.99	2.91
3. Vegetables, Fruits & Other Agriculture	2.06	1.59	2.09
4. Forestry, Fishing & Mining	1.91	1.55	1.99
5. Meat & Dairy Products	2.53	1.07	5.10
6. Canning Preserving & Beverages	2.35	1.41	3.52
7. Grain Mills & Other Food Products	2.15	1.14	3.35
8. Textiles & Apparel	1.59	.90	2.05
9. Lumber & Wood Products	2.46	1.51	3.43
10. Plywood Mills	2.21	1.26	3.15
11. Paper & Allied Products	2.14	1.33	2.71
12. Printing & Publishing	2.01	1.38	2.30
13. Chemical & Petroleum Products	1.66	1.02	2.08
14. Stone, Clay & Glass Products	2.43	1.47	3.59
15. Iron & Steel	2.00	1.47	2.26
16. Nonferrous Metals	1.59	.82	2.28
17. Fabricated Metal Products	1.78	1.05	2.39
18. Machinery	1.76	1.20	2.03
19. Aerospace	1.58	.99	1.90
20. Other Transportation Equipment	1.77	1.19	2.09
21. Other Manufacturing	1.96	1.25	2.36
22. Construction	2.09	1.20	2.93
23. Transportation Services	2.03	1.55	2.09
24. Communications & Utilities	1.99	1.53	2.10
25. Trades	2.11	1.70	2.10
26. Finance, Insurance & Real Estate	2.13	1.71	2.14
27. Services	2.11	1.53	2.25

OUTPUT, INCOME/OUTPUT AND INCOME MULTIPLIERS, UPPER MAIN STEM, SAN JUAN, AND GREEN RIVER SUB-BASINS, 1980

Row Numbers			Industrial Sector	Output Multiplier			Income/Output Multiplier			Income Multiplier		
1	1		Range Livestock	2.05	1.98		1.29	1.24		2.35	1.94	
2			Feeder Livestock	2.78			1.04			4.00		
3	2		Dairy	2.11	2.18		1.14	1.22		2.71	2.18	
4			Food Field Crops	2.00			1.24			2.18		
	3		Field Crops		1.93			1.26			1.75	
5			Truck Crops	2.26			1.10			3.14		
6	4		Fruit	2.26	1.16		1.15	.88		3.11	2.67	
7	5		Forestry	1.72	1.84		1.09	1.19		1.91	1.72	
			Agriculture									
8	6		All Other Agriculture	2.09	1.92		.96	.87		3.20	2.49	
9	7		Coal	1.75	1.71		1.08	.82		1.96	2.00	
10	8		Oil and Gas	1.64	1.20		.61	.18		3.39	2.25	
11	9		Uranium	1.85	1.85		.71	.51		2.73	3.19	
			Uranium, Non-Fuel									
12			Zinc	1.60			.86			1.91		
13	10		All Other Mining	1.83	1.76		1.23	.71		1.92	2.37	
14	11		Food and Kindred	2.71	2.10		1.09	.90		5.19	3.21	
15	12		Lumber and Wood	2.29	2.19		1.11	1.17		3.96	2.60	
16	13		Printing and Publishing	1.63	1.63		.93	.77		2.02	1.88	
17			Fabricated Metals	1.52			.71			2.03		
18	14		Stone, Clay and Glass	2.04	1.40		1.04	.35		3.25	2.50	
			Chemicals, Petroleum, Coal									
19	15		All Other Manufacturing	1.38	1.57		.47	.39		2.24	2.44	
20	16		Wholesale Trade	1.61	1.85		1.42	.90		5.68	2.00	
21	17		Service Stations	2.02	2.10		1.43	.11		2.01	.20	
22	18		All Other Retail	2.13	2.10		1.40	.12		2.30	.20	
23	19		Eating and Drinking	2.02	1.87		.93	.79		2.82	2.39	
24	20		Agricultural Services	1.67	1.60		.83	.67		1.98	1.97	
	21		Oil Field Services		1.57	1.08		.52	.96		2.17	19.20
25	22		Lodging	1.97	1.75	1.51	1.11	.70	.42	2.52	2.33	2.63
26	23		All Other Services	2.01	1.81	1.65	1.43	.96	.57	2.20	1.88	2.28
27	24		Transportation	1.81	1.74	1.82	.91	.71	.95	2.28	2.22	1.94
28	25		Electric Energy	1.95	1.82	1.65	1.41	.63	.48	2.59	2.86	3.43
29	26		Other Utilities	2.18	1.80	1.48	1.98	.65	.32	2.11	1.03	2.91
30	27		Contract Construction	2.10	2.38	1.54	.84	.75	.46	3.11	3.75	2.19
31	28		Rentals and Finance	1.91	1.90	1.78	1.40	1.13	1.30	1.89	1.82	1.65

☐ UPPER MAIN STEM SUB-BASIN

☐ SAN JUAN SUB-BASIN

☐ GREEN RIVER SUB-BASIN

TABLE G-4

OUTPUT, INCOME/OUTPUT AND INCOME MULTIPLIERS, WASHINGTON STATE, 1980

Industrial Sector	Output Multiplier	Income/Output Multiplier	Income Multiplier
1. Field Crops	2.63	1.83	3.39
2. Vegetables	3.10	2.46	3.15
3. Livestock and Products	2.54	1.41	4.27
4. Other Agriculture	2.88	2.20	3.28
5. Fishing	3.54	2.21	3.30
6. Meat Products	2.87	1.34	7.88
7. Dairy Products	3.59	1.90	7.31
8. Canning and Preserving	3.30	2.13	6.09
9. Grain Mills	2.33	1.10	7.86
10. Beverages	3.25	2.24	4.57
11. Other Foods	2.94	2.23	4.65
12. Textiles	2.34	1.23	3.24
13. Apparel	2.29	1.49	3.31
14. Mining	2.69	1.90	3.52
15. Forestry	3.10	2.69	2.89
16. Logging	3.56	2.37	5.04
17. Saw Mills	3.44	2.36	5.22
18. Plywood	2.89	1.86	4.63
19. Other Wood	2.76	1.67	4.91
20. Furniture and Fixtures	2.91	1.98	3.96
21. Pulp Mills	3.42	2.22	5.84
22. Paper Mills	3.08	2.21	3.95
23. Paperboard Mills	3.05	1.99	4.63
24. Printing and Publishing	2.90	2.12	3.53
25. Industrial Chemicals	3.08	2.50	3.16
26. Other Chemicals	2.25	1.34	3.83
27. Petroleum Refining	1.83	.91	3.79
28. Glass and Stone	3.02	2.21	3.68
29. Cement and Clay Products	3.19	1.98	5.35
30. Iron and Steel	3.03	2.31	3.55
31. Non-Ferrous Metals	2.28	1.05	4.77
32. Aluminum	2.21	1.34	3.53
33. Heavy Metal Products	2.93	1.07	2.06
34. Light Metal Products	2.08	1.18	3.56
35. Non-Electric Motive Equipment	2.70	1.92	3.62
36. Machine Tools and Shops	2.43	1.64	3.35
37. Non-Electric Industrial Equipment	3.05	2.48	3.22
38. Electric Machinery	2.18	1.47	3.06
39. Aerospace	2.01	1.23	2.93
40. Motor Vehicles	2.94	2.23	3.38
41. Ship Building	1.96	.95	3.65
42. Other Manufacturings	3.01	2.31	3.45
43. Transportation	2.38	1.60	3.33
44. Electric Companies	2.57	1.65	3.84
45. Gas Companies	2.35	1.65	3.11
46. Water Services	1.94	1.07	3.45
47. Communications	2.72	2.13	3.04
48. Construction	2.72	1.62	3.95
49. Wholesale/Retail Trade	3.21	2.60	3.21
50. Finance	3.31	2.71	3.35
51. Insurance	3.33	2.86	3.36
52. Real Estate	3.52	2.64	4.13
53. Business Services	3.06	2.46	3.24
54. Personal Services	3.13	2.39	3.62

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